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# Printing Committee To Open Bids March 2

## Approves Recommendations That Changes Be Made in Specifications To Meet War Emergency — Bids Call For 57,900,000 Pounds of Various Kinds of Paper — To Make Awards March 9.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 11, 1942—The Joint Congressional Committee on Printing at a meeting last week approved the recommendations of its Paper Specifications Committee that changes be made in specifications because of the present war emergency and that the Joint Committee open bids on March 2 for 57,900,000 pounds of various kinds of paper for the use of the Government Printing Office for the three months' period beginning April 1 next. At the last bid opening also for a three months' period ending March 31 awards were made for 56,520,000 pounds. The Joint Committee will meet on March 9 to make awards.

### Estimated Quantities

The approximate estimated quantities set forth in detail in the Schedule comprise:

1,800,000 pounds newsprint paper.
4,248,000 pounds machine-finish book paper.
300,000 pounds antique book paper.
1,800,000 pounds off-set book paper.
80,000 pounds lightweight machine-finish book paper.
220,000 pounds 50% rag antique book paper.
20,000 pounds 75% rag laid antique book paper.
30,000 pounds 100% rag antique book paper.
1,950,000 pounds supercalendered book paper.
3,150,000 pounds machine-coated book paper.
1,030,000 pounds coated book paper.
40,000 pounds lithograph paper.
3,050,000 pounds mimeograph paper.
300,000 pounds U S M O safety writing paper.
4,000 pounds U S M O writing paper.
4,000 pounds safety writing paper.
11,070,000 pounds writing paper.
1,610,000 pounds map paper.
2.130,000 pounds manifold paper.
10,451,000 pounds bond paper.
2,162,000 pounds ledger paper.
1,625,000 pounds index paper.
3,000 pounds tissue paper.
660,000 pounds cover paper.
405,000 pounds manila paper.
1,110,000 pounds kraft paper.
3,000 pounds paraffin paper.
600,000 sheets gummed paper.
231,000 pounds blotting paper.
40,000 pounds oiled manila tympan paper.
5,000 pounds plate-wiping paper.
4,000 pounds back-lining paper, for case making.
15,000 pounds high finish red sulphite.
300,000 pounds manila tag board.
920,000 pounds calendered tag board.
50,000 pounds manila cardboard.
280,000 sheets railroad board.
685,000 sheets railroad board.
40,000 sheets pressboard.
600,000 pounds news board.
520,000 pounds chip and strawboard.
15,000 pounds marble-grained board.
36,000 pounds box board.
720,000 pounds binder's board.

In cases where more than 1,000 reams are called for, proposals will be received for 1,000 reams or more.

### Changes Due to Emergency

Paper bidders should pay especial attention to the following report of the Paper Specifications Committee of which Ansel Wold, is chairman, because of the changes made due to the war emergency. The report states:

The Committee on Paper Specifications respectfully submits its Forty-third Report and the accompanying recommended schedule for paper for the public printing and binding and blank paper for the use of the Government departments and establishments in the District of Columbia for the term of 3 months, beginning April 1, 1942.

At the request of the War Production Board the Committee has added in the Instructions a new paragraph numbered 1 and entitled "Priority." Old paragraphs numbers 1 to 11, inclusive, of the Instructions were renumbered 2 to 12, inclusive.

Paragraph 35 of the Instructions under the head-

*(Continued on page 11)*

# Marathon to Double Its Plastics Production

## Salvo Corp. Subsidiary of Marathon Paper Mills Co. Plant To Increase Its Output of Laminated Plastics To Meet Heavy War Needs — Mills Planted 1 Million Trees Last Year — Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., February 9, 1942—Finding itself suddenly precipitated into the war picture as practically the only source of materials for plastics needed for defense, the Marathon Paper Mills Company, Rothschild, Wis., is rushing to completion a plant which will double its output. The structure will be ready in about sixty days.

It was only last November that the company, through its subsidiary, the Salvo Corporation, placed these products on the market commercially, according to L. F. V. Drake, president of Salvo. The sales were doubled in December, and January tripled the December volume. Production is now running 25 tons per day and the present plant will soon reach capacity. Little additional equipment and personnel will be required to double the output.

All of the lignin, formerly dumped into the Wisconsin River as waste from the pulp mills, is now utilized in making these new products. Lime is added to waste sulphite liquors, and precipitates out calcium lignin sulfonate. From the pure lignin acid comes vanillin, the flavoring constituent of vanilla, and material for tanning that is more efficient than tanbark, fast disappearing from the American industrial scene. Other effluents serve as agents that disperse cement more efficiently through sand, gravel and water, and also are effective as water softeners.

### Wide Utilization of Plastics Predicted

Plastic pulp is made by cooking the effluent liquid with hardwood, producing a soft, pliable mass resembling mud. It is made into sheets under pressure of 2,000 pounds to the square inch and becomes laminated plastic, to be used for tabletops, refrigerators and airplane doors, forms for airplane wings and new and constantly added uses. For molded plastics, the product is produced in powdered form. By mixing with pheno (carbolic acid), various customer plants can turn out an endless variety of products. Washing machine manufacturers are using the powder to mold agitators. Predictions have come from automobile manufacturers that eventually it will replace steels in car bodies and other parts of machines. Its use for parts of ships, tanks, planes, bomb fuses, insulators, cases for shipping shells and other products directly connected with the war effort is being investigated.

The plastic, in either form, is found to be tough, strong as steel and water resistant. Its already manifold uses are being constantly expanded, with the United States Bureau of Standards working daily on experiments. There is a vigorous demand as a substitute for nickel, steel, aluminum and other metals now urgently needed for other defense equipment.

Equipment at the Salvo plant is sufficient to press approximately five tons of laminated plastics daily. The remaining 20 tons are being shipped to other concerns, largely in powdered form. The laminated product weighs one-half as much as aluminum and one-fifth the weight of steel, and is as strong pound for pound as steel in its earliest beginnings. About 350 tons per month are now being used in defense work.

### Research Work Started in 1927

Commercial utilization is the culmination of fifteen years of research costing approximately $2,000,000. In 1927 the Marathon company enlisted the services of Guy Howard, chemical engineer, gave him a staff of research chemists, and allowed him a free hand in developing products that would utilize sulphite liquor waste and its principal component, lignin. Eventually a reclamation plant was built and the subsidiary organized. Its first commercial products were vanillin and the tanning material. The development of plastics followed, and when their commercial possibilities were effectively demonstrated, they were introduced to the market just at the threshold of the frantic search for substitutes for defense materials.

It is believed that Marathon's research and that conducted by the United States Forest Products Laboratory at Madison, is but the beginning of a vast source of new materials and products. It is claimed that at present less than one-half of one per cent of the 3,000,000 tons of wasted lignin is made use of commercially.

### Mills Planted 1 Million Trees in 1941

More than 1,000,000 trees were planted during 1941 on the reforestation lands of Wisconsin paper mills, according to a report issued by the Wisconsin Conservation Commission. This is the number sold on a cost basis from state nurseries to the Tomahawk Kraft Paper Company, Tomahawk, Wis., the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., and the Nekoosa-Edwards Paper Company, Port Edwards, Wis.

### Nekoosa-Edwards Increases Wages

All hourly workers of the Nekoosa-Edwards Paper Company, Port Edwards and Nekoosa, Wis., were given a wage increase of two cents per hour, effective February 1, according to announcement of John E. Alexander, president. The increase establishes a base hourly rate of 60 cents and applied to 1,350 workers.

### New Yorker to Speak at Safety School

Victor L. Short, New York City, will be the speaker at the second meeting of the Twin City Safety School of Neenah and Menasha, Wis., Tuesday evening, February 17, at the high school auditorium at Manasha. He is president of the Institute of Human Science, and will discuss the human side of safety.

Entertainment will be furnished by the Lakeview mill band of the Kimberly-Clark Corporation ,and an indoor circus troupe from Manitowoc, Wis. Tickets are being distributed to all workers in paper mills and allied industries of the two cities.

# Paper Board Output in Canada Expanding

## Production Has Steadily Increased From 155,000 Tons In 1936 To An Estimated 500,000 Tons In 1941—New Executive Committee of Pulp and Paper Association Appointed — Other Mill News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 9, 1942—One of the most surprising developments of the Canadian pulp and paper industry in recent years is the remarkable growth in paper board manufacture. Paper board has been made in Canada for upwards of a quarter of a century; indeed, the Board Section of the Canadian Pulp and Paper Association has just observed its 25th anniversary of its formation. At the time when the board manufacturers first got together to solve their mutual problems by co-operation there were very few mills making board, grades were limited, and the total tonnage amounted approximately to 50,000 tons per annum. Despite tremendous competition from the United States and from Europe, and what the operators considered insufficient tariff protection for a new industry, the industry managed to keep alive and gradually to extend. The growing use of packages as an advertising and sales medium helped considerably, but when kraft liner board was introduced for the manufacture of corrugated shipping containers the industry really came into its own. From 155,000 tons produced in 1926, the production rose to 364,000 tons in 1936. The greatest increase, however, has taken place in the last five years for in 1941 the producer reached, in round figures, 500,000 tons, an all-time record, many demands for board for war purposes being partly responsible.

### Mills Have Met All Demands

Notwithstanding the unprecedented demand, the mills have not only been able to meet all normal demands during a period when it was impossible to augment supplies by importation, but they have helped to meet demands in the United Kingdom and the United States, the exports to the latter in 1941 being the largest in history. This latter was due to the extraordinary demand that arose in the United States through the Lease-Lend Act and the assistance given by the Canadian newsprint mills in producing .009 corrugating board and other emergency board in demand in the States. This assistance, according to N. B. A. Fair, the chairman of the Board Section, has been greatly welcomed by the United States Government and the U. S. A. board industry.

Mr. Fair further says that although prices of board in the United States have increased considerably during the past year, Canadian prices have remained stable, in spite of increased taxes and the increased cost of labor, materials, pulpwood and especially of waste paper.

### Wood Cutting Slower

Contracts for the cutting of 465,000,000 cubic feet of wood were handed out by different companies in Quebec Province from the start of the current cutting season until January 1, 1942, it is announced by the Provincial Department of Lands and Forests.

The announcement said that at January 1, 1941, contracts had been awarded for the cutting of 436,000,000 cubic feet. By April 1, 1941, companies raised the figure to 445,000,000 cubic feet.

The department said that the wood cutting is proceeding more slowly than usual because of the lack of man power. At the present time there are about 50,000 working in the various forests of the province.

### Forests Canvas "Greatest War Worker"

Canada's forests were termed "Canada's greatest war worker and most ardent peace builder," by Robson Black, vice-president and manager of the Canadian Forestry Association, in an address in this city. He said nations that sacrifice their forest lands sacrifice their hope of national greatness and solvency and no nation could save a war or survive in peace without a forest belt.

He cited the story of the Mediterranean countries of Greece, Turkey, Palestine and Italy which had permitted their lands to be stripped of the "automatic governor" of forests. With the loss of forests came the loss of inland waterways as well as a subsequent sequence of erosion of mountain slopes that rendered the valleys unfertile.

Cyrenaica, he explained, was once the grain growing belt of the Ancient Roman Empire. Today there was not one acre or even a patch of grain; but there were records that told of some 50,000 lumberjacks who had worked in the now vanished forests that once stood sentinel against parching winds and furnished moisture for crops.

Touching on the great contribution of Canada's forest industries to the war effort, he mentioned that in the past two years enough money had been realized from them to purchase 26,000 Spitfire planes.

### New Executive Committee of C.P.P.A.

The following is the new executive committee appointed by the Canadian Pulp and Paper Association to assist the new president, R. L. Weldon in his duties for the ensuing year: C. W. Barber, Spruce Falls Pulp and Paper Company; A. Crabtree, Fraser Companies; Maj. E. Flynn, Price Brothers; W. S. Kidd, E. B. Eddy Company; J. R. S. McLernon, Dryden Paper Company, and W. H. Smith, Abitibi Power and Paper Company.

### Paper Trade Association Elects Officers

L. T. Havill, president of T. Havill Paper Company, Montreal, was elected president of the Canadian Paper Trade Association at the annual meeting of that body in Montreal.

Other officers named were: Honorary president, C. H. McFarlane, Montreal; vice-president, Col. J. H. Chipman, Toronto; treasurer, T. J. Macabe, Toronto; secretary, Ivan Moffitt, Toronto.

## Paper Bags for Fertilizer Use

Paper bags will be used extensively by the fertilizer industry during the coming year instead of burlap, due to shortage of the latter material, according to D. S. Coltrane, assistant commissioner of agriculture, State of North Carolina, Raleigh.

# Legal Battle for Sale of Abitibi Renewed

## Hearing Opens To Consider Appeal of Liquidator Against Judgment of Justice Middleton Ordering Sale of Assets of Abitibi Power & Paper Co. — Argument Covers Legal Points — Case Continues.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., February 9, 1942—The famous Abitibi Power and Paper Company, Ltd., legal battle was resumed this week. Ontario appellate court commenced hearing at Osgoode Hall Thursday the appeal of R. S. McPherson, liquidator, against a judgment of Mr. Justice Middleton, ordering the sale of the assets of that company on February 18.

The order was made in a foreclosure action in which Montreal Trust Company, Canadian trustees under a bond mortgage, was plaintiff, and Abitibi Power and Paper Company, Ltd., which went into liquidation in 1932, was defendant.

The appeal is being heard by five judges: Justices Riddell, Fisher, Henderson, Gillanders and Hogg. Counsel and interests represented were: W. N. Tilley and R. W. S. Johnston for Montreal Trust Company; Glyn Osler and D. G. Guest for individual defendant bondholders; Attorney-General Gordon Conant, A. M. Stewart and C. R. Magone for the Province of Ontario; A. G. Slaght for protective committee of preference shareholders; J. L. Stewart for protective committee for general creditors; W. Judson for common stockholders' protective committee; D. L. McCarthy and Gordon McMillan for the liquidator of Abitibi Power and Paper Company, Ltd.

### Explains Court Order for Sale

Mr. McCarthy explained that the order of Mr. Justice Middleton for sale to be held without reserve bid on February 18, 1942, was made after the Montreal Trust Company had successfully challenged the validity of the Ontario Moratorium Act under which no further sale proceedings could be made in the absence of action by the attorney-general of the province until December 31, 1942.

Mr. McCarthy followed the long line of court proceedings respecting Abitibi from 1932 down to the appointment of the McTague Royal Commission to propose a plan for reorganization, and passing of the Abitibi Moratorium Act in 1941 barring further proceedings until December 31, 1942.

"The question that now arises," said Mr. McCarthy, "is the constitutional question whether or not the act passed in aid of the report of the royal Commission is intra vires or not."

M. Slaght said there was also involved the question of equitable jurisdiction. Mr. Tilley declared that only the question of law as to the constitutional validity of the act was before the court. Mr. McCarthy stated further that Mr. Justice Roach, who gave leave to appeal against the Middleton judgment, said there were other matters of importance to be considered. Mr. Slaght elaborated by contending that the question was wide open on the order of Mr. Justice Roach.

### Argument Covers Legal Technicalities

In continuing the argument next day, Mr. Tilley for the Montreal Trust Company said: "I ask your lordship to take as a fundamental thing that where the province singles out some one company, some one transaction, some one security for special legislation under the guise of legislating for the administration of justice, there is real ground right from the start to view the statute critically."

It was different from the general act, Mr. Tilley contended, as it sought to deal only with a moratorium for the Abitibi company. He referred to the Alberta bill which imposed heavy confiscatory taxes upon the Dominion banks and which was held to be invalid by the judicial committee of the privy counsel.

It had been held by the supreme court and settled so far as Canada is concerned, Mr. Tilley proceeded, that a province cannot do indirectly what it cannot do directly. "If they can't stop an action," he argued, "they can't delay an action."

"Mr. Justice Roach," said Mr. Tilley, "says the pith and substance of this legislation is temporary. Of course it is. What has that got to do with the assertion of a right by the province to control the courts? Under the administration of justice it has no power to prevent a person coming to the sovereign to have justice done to him."

They were Canadian courts, where all had a right to come, he said. They did not always like the justice they got, but they had a right to ask for it. The legislature, he said, had invaded the Dominion's bankruptcy field.

The case is proceeding.

## Color Council to Meet

The eleventh annual meeting of the Inter-Society Color Council will be held on February 26 and 27, 1942, at the Metropolitan Museum of Art in New York City. The technical session has been arranged with the active assistance of several of the country's leading art educators, and will concern subjects of interest to those who teach color, particularly those who teach in professional and college art schools.

John L. Parsons, chairman, will report for the delegation from the Technical Association of the Pulp and Paper Industry, Thursday morning, February 26.

All delegates and members of the Council are urged to be present at the business session as well as at other sessions. Members of all member bodies are invited. And all those interested in color in art education are cordially invited to attend any or all sessions.

Copies of the complete program will be available on request. Requests should be addressed to the secretary, Miss Dorothy Nickerson, Inter-Society Color Council, Box 155, Benjamin Franklin Station, Washington, D. C. It will save time if your request is accompanied by a stamped self-addressed envelope.

## Eddy Earns $4.50

The Eddy Paper Corporation for 1941, reports a net profit of $833,344, equal to $4.50 each on 185,042 capital shares, compared with 1940 net of $557,525, or $3.01 a share.

# PRINTING COMMITTEE TO OPEN BIDS MARCH 2

*(Continued from page 7)*

ing "Tub-Sized" was revised, as it is unnecessary to specify a minimum percentage of sizing material in the sizing solution.

In view of the restrictions by the War Production Board of the use of chlorine for bleaching sulphite pulp the Committee found it necessary to permit unbleached sulphite in lieu of bleached sulphite in all grades of papers which were formerly required to be free from unbleached pulp.

In view of the national emergency the use of fillers not to exceed amounts resulting in 10 per cent ash in the finished papers are permitted in the manufacture of sulphite and rag-content writing, map, manifold, bond, ledger, and index papers, except 75 and 100 per cent grades. Such fillers must not be of an abrasive character so as to cause excessive wear of ruling pens or metal printing plates.

The "sizing" requirements for antique book, 50% rag lightweight machine-finish book, and 50% rag antique book, Lots Nos. 22, 24, and 26-28 were eliminated.

Lots 34 to 38, inclusive, supercalendered book were renumbered 33 to 36, inclusive.

Lot 38—*Supercalendered book.*—This lot was eliminated since it is no longer needed.

Machine-Coated Book.—The stock requirement was eliminated in order to permit groundwood and unbleached pulp in the base paper. A new lot number 37 was added to provide for 90-pound machine-coated book paper in sheets. Lot No. 39 was renumbered 38. Two new lots, Nos. 39 and 40, were added to provide for machine-coated paper in rolls 28½ and 38 inches wide.

Lot 43—*50% rag machine-finished lithograph.*—This paper is required to be wrapped and sealed in packages of 1,000 sheets each and to be delivered on skids.

In order to help relieve the shortage of chemical wood pulp a new lot, No. 44, calling for ground wood mimeograph paper was added to the schedule.

Mimeograph Paper.—Lot 44 was renumbered 45, and old Lot No. 45 was eliminated.

Sulphite Writing.—Lot No. 62 was eliminated, and Lot No. 63 was renumbered 62.

In the interest of conserving chemical wood pulp and for the purpose of economy a new lot, No. 63, calling for ground-wood writing paper in rolls 32 and 38 inches wide for tablet- and scratch-pad use was added to the schedule.

The maximum limits for rosin sizing in sulphite bond, sulphite ledger, and sulphite index papers, Lots Nos. 102 and 103, 151 and 152, and 184, respectively, have been eliminated.

The maximum rosin content of 50% rag manifold, 25% and 50% rag bond, ledger, and index papers, Lots Nos. 75 to 80, 85, 105 to 118, 120 and 124, 154 to 157, and 190 to 193, respectively has been increased from 1.5 to 2.5 per cent. The maximum rosin content of 75% rag bond and ledger papers Lots Nos. 125 and 126 and 168 to 173, respectively, has been increased from 1.2 per cent to 1.5 per cent.

Lot 184—*Sulphite index.*—The thickness requirement for 230-pound index was changed from .0105 inch to .0110 inch to conform more closely to manufacturing practice.

No standard samples to show color, finish, formation, and cleanliness will be submitted to prospective bidders. The brightness of the various grades of paper shall be in accordance with that proposed by the War Production Board.

This schedule embraces 186 lots, which is 2 more than the preceding schedule. The quantity estimated for the term of 3 months beginning April 1, 1942, is approximately 57,900,000 pounds, as compared with 56,520,000 pounds for the previous contract period.

## Pacific TAPPI Discusses Wood Waste

The Pacific Section of the Technical Association of the Pulp and Paper Industry held its monthly dinner meeting at the Everett Country Club, Everett, Wash. on Feb. 3, 1942 with an attendance of 107.

Professor Bror L. Grondal, College of Forestry, University of Washington, gave a paper illustrated by pictures, drawings and charts, and entitled "Logging Waste and Its Potential Value in Pulp Manufacture." The discussion was based on studies made last summer under the Conservation of Resources program of the State of Washington.

Carl E. Braun, Chairman of Pacific TAPPI, and vice-president and mill manager of Hawley Pulp and Paper Company, Oregon City, Ore., led a roundtable discussion of "Maintenance in Pulp and Paper Mills."

The next TAPPI dinner meeting will be held March 3 in Portland, Ore.

Those in attendance were as follows:—Gerald Alcorn, C. A. Anderson, B. Eldon Anderson, Niles M. Anderson, Fred Armbruster, Henry E. Beeker, Geo. H. Beisse, H. K. Berger, Paul S. Billington, Carl E. Braun, G. S. Brazeau, W. C. Bubar, A. M. Buck, A. M. Cadigan, Claude Callaghan, John M. Carlson, Robert Carlson, Wm. C. Chapman, R. E. Chase, P. W. Christensen, Sidney M. Collier, N. W. Coster, J. V. B. Cox, J. Bayard DesCamp, John Doering, R. E. Drane, R. E. Draper, A. E. Duke, George E. Durkee, E. O. Ericsson, A. E. Erickson, O. E. Fox, C. P. Fulton, N. O. Galteland, Irving R. Gard, A. S. Gerry, Wm. R. Gibson, Albert C. Gribos, Harold G. Griep, Bror L. Grondal, V. C. Haner, H. A. Hauff, Norman Heglund, Wheeler Hinkle, J. J. Hollender, H. P. Huebner, Rusty Inkster, E. R. Johnson, Lester M. Johnson, W. A. Kelly, B. L. Kerns, R. L. Kettenring, Carl R. Koch, Harold Lange, Chas. Lawrence, Russell LeRoux, J. R. Lewis, D. K. MacBain, A. C. McCorry, J. H. McCarthy, John J. McNair, Don McPhee, J. H. Moak, T. H. Moran, D. C. Morris, Gordon Morseth, Fred Nicholson, J. G. O'Brien, F. A. Olmsted, Oscar J. Olson, William Pittam, Paul A. Pittenger, Frank A. Purdy, A. S. Quinn, Carl A. Ramstad, Archie P. Ratliff, Jr., S. A. Ridpath, E. D. Rich, H. H. Richmond, Oliver E. Ronken, G. D. Ross, H. Radford Russell, S. A. Salmonson, Walter A. Salmonson, Harlan Scott, J. M. Shedd, Brian Shera, C. A. Shively, L. K. Smith, Chas. Stehman, Thomas W. Stewart, H. T. Stoddard, Allan G. Strang, Earl G. Thompson, William E. Thorp, V. L. Tipka, G. R. Torkelson, G. P. Tostevin, H. A. Vernet, R. O. Vognild, F. P. Wilder, Kenneth E. Willmer, L. A. Wendt and R. E. B. Wood.

## OPA Paper Board Changes

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 11, 1942—Amendment No. 6 to Price Schedule No. 32 for paper board sold east of the Rocky Mountains announced today by Leon Henderson, Administrator of the Office of Price Administration, has the effect of transferring several sections from the status of a formal price schedule to voluntary agreements. The amendment, effective as of February 3, 1942 is as follows:

Paragraphs (c) and (j) of Section 1347.59, paragraph (g) of Section 1347.61, paragraph (g) of Section 1347.62, and Sections 1347.63, 1347.64, and 1347.65 are hereby deleted;

Section 1347.51, 1347.52, and paragraph (f) of Section 1347.61 are hereby amended as set forth below:

SS 1347.51 Maximum prices for paperboard. On and after February 3, 1942, regardless of the terms of any contract or sale or purchase or other commitment, in the area east of the Rocky Mountains, no producer, and no agent or representative of a producer, shall sell, offer to sell, deliver or transfer any grade of paperboard, and no person shall buy, offer to buy, or accept delivery of any grade of paperboard from a producer, or agent or representative of a producer, at prices higher than the maximum prices set forth in Appendices A and B, hereof, incorporated herein as Section 1347.61 and 1347.62, respectively. The sale of any paper board shipped from or into the area east of the Rocky Mountains, shall be subject to this Schedule.

SS 1347.52 Less than maximum prices. Lower prices than those set forth in Appendices A and B may, however, be charged, demanded, paid, or offered.

SS 1347.61 Appendix A. Maximum prices for paperboard used in the manufacture of folding paper cartons, set-up boxes, or for any other purposes, sold east of the Rocky Mountains.

(f) Trimming. For trimming sheets add $1.00 per side per ton.

The period to be used for price determinations under the voluntary agreements will te minate October 15, 1941, instead of September 30, 1941, as formerly provided under the price schedule. None of the stated prices per ton or per thousand square feet are changed in the amendment or in the voluntary agreements.

Twenty-five grades used principally in the manufacture of fibre shipping cases and fifteen grades used principally in the manufacture of boxes by the set-up and folding carton industries remain under the formal ceiling prices established in Section 1347.61, Appendix A, and in Section 1347.62, Appendix B, as amended, effective January 1, 1942. The sections wholly deleted from Price Schedule No. 32 are 1347.63, 1347.64 and 1347.65.

Maximum price for other paperboards which are being transferred from the January schedule into voluntary agreements include special whites, special colors, special sizing, special test and other special characteristics or requirements—all of which were previously covered in Paragraph (g) in Appendix A and in Appendix B.

Price control by individual voluntary agreements with manufacturer also will be made with producers of specialty paperboards formerly covered in Section 1347.63, Appendix C. These types are used for a wide variety of purposes and have been controlled by Amendment 4 since January 1, 1942, by which manufacturers could not exceed prices in effect during the first nine months of 1941. This section, under Amendment No. 6, is removed from the schedule and the grades it covered will be included in the voluntary agreement covering the period from October 1, 1940, to October 15, 1941.

The paperboard schedule as revised covers the sale of the product shipped from or into the area east of the Rocky Mountains, an area defined as all the continental United States with the exception of eleven Western states. Individual voluntary agreements already have been made with manufacturers of paperboard in the eleven Western states.

Buyers and sellers of paperboard and specialty paperboard are requested by OPA to observe strictly ceiling prices set forth in Schedule No. 32 as amended January 1, 1942, during the interim while voluntary agreements are being prepared and mailed, but resales by wholesale distributors should be in accordance with amendment No. 5 released January 30.

Specific requests will be sent within the next few days to manufacturers, wholesale dealers, distributors, jobbers and exporters, requesting their cooperation with the Office of Price Administration and setting forth in the voluntary agreements all of the sections deleted from the schedule by Amendment No. 6, including only a few changes, the need for which has developed during the last thirty days.

## Program for Tissue Meetings

The schedule of meetings of The Tissue Association during paper week, February 15-20, is as follows:

Committee of Roll and Interfolded Toilet Tissue and Paper Towel Divisions—Saturday, February 14, 10:00 A.M., Office of The Tissue Association, Room 3502, 122 East 42nd street.

Roll and Interfolded Toilet Tissue and Paper Towel Divisions—Sunday, February 15, 10:00 A.M., Waldorf-Astoria Hotel, Room assembly 4—J. K. L.

Nominating Committee of General Industry—Sunday, February 15, 4:00 P.M., Waldorf-Astoria Hotel, Room of Ross A. Fife (1768-70).

Wrapping, Waxing, Kraft Tissue and Jumbo Napkin Divisions—Monday, February 16, 10:00 A.M., Waldorf-Astoria Hotel, Room 4-M.

General Meeting of the Tissue Industry—Tuesday, February 17, 10:00 A.M., Waldorf-Astoria Hotel, Room 4-M.

Board of Governors—Tuesday, February 17, 2:00 P.M., Waldorf-Astoria Hotel, Room of Ross A. Fife (1768-70).

Sanitary Absorbent Tissue Industry—Wednesday, February 18, 10:30 A.M., Waldorf-Astoria Hotel, Room 4-M.

## To Be Assistant Sales Manager

The Philadelphia Quartz Company, Philadelphia, manufacturers of silicates of soda for the fiber container and paper industries has announced the appointment of John C. Russell as an assistant sales manager. Mr. Russell began his business career with the sales department, joining the company in 1924. Other sales officials are: J. P. Elkinton, vice president in charge of sales; Edwin A. Russell, sales manager; Carl F. Wolcott, assistant sales manager.

## Goes with Youngstown Welding Co.

E. Peterson, for a long number of years with the B. F. Goodrich Company, Akron, Ohio, as manager of sales for the paper industry has joined the organization of the Youngstown Welding and Engineering Company, Youngstown, Ohio, as vice president.

E. Peterson

Most of the time Mr. Peterson was with the Goodrich Company his attention was devoted to the development of sales of rubber covered rolls. The Youngstown Welding and Engineering Company also is in the roll covering business as the concern applies Monel and other non-corrosive metal covers to various rolls that are employed in the paper industry.

## Western Board Co. in Production

Kalamazoo, Mich., February 2, 1942—Idle more than a decade, papermaking machinery at the Western Board and Paper Company plant in King highway is humming once again.

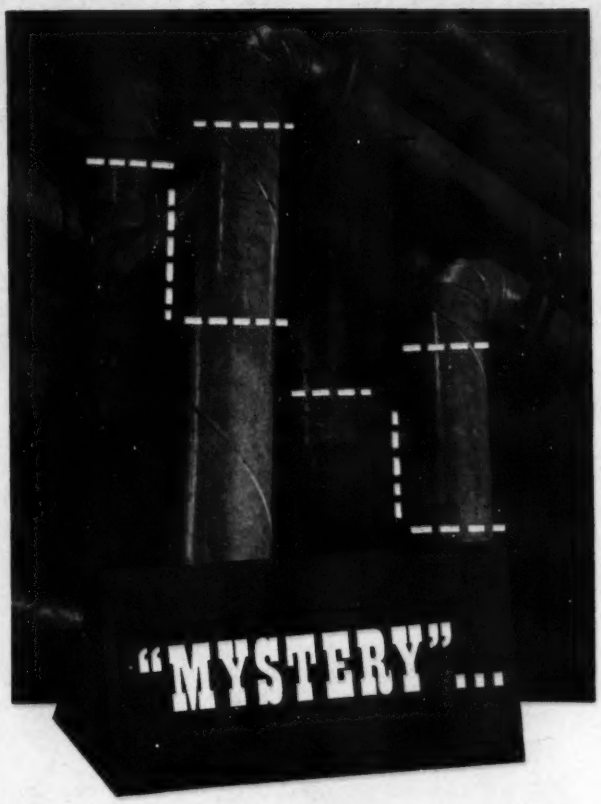
Three months ago the mill was taken over by a new corporation headed by Leon and William Slavin, proprietors of the Michigan Paper Stock Company here. Rehabilitation of the plant and installation of a quarter of a million dollars' worth of new machinery was completed here last week, and test runs were begun.

Today, the brothers reported, the mill is producing about 85 tons of box board and test liner paper daily. Peak production will approximate 140 tons daily.

The mill is employing about 150 persons, said Leon Slavin. Employment probably will remain stationary at that figure.

## To Control Exports of Pulpwood

In the issue of the Paper Trade Journal of January 29, the main headline announcing the decision of Canada to place pulpwood under export control unfortunately read, "Canada To Control All Exports of Pulp". The last word in this head should, of course, have been pulpwood and while the subhead indicated this fact and the body of the article is correct, it has been suggested that this correction be printed.


**OF THE MISSING JOINTS**

• Actually there's no mystery . . . The "missing" joints were unnecessary because the job was designed with Armco Spiral Welded Pipe.

This way the cost of paper mill piping often is reduced as much as 30 per cent by Armco's method of "tailoring" pipe and fittings to the job. At least one pair of flanges is eliminated at every bend. Installation is easy and quick. Fewer joints also mean there is less chance for costly, troublesome leaks. The pipe itself is smooth inside for high flow capacity and has no threads to invite rust attack.

Armco Spiral Welded Pipe is supplied in any diameter from 6 to 36 inches and in uniform lengths up to 50 feet. Just send us the plan of your next piping job. We'll gladly submit a quotation. The American Rolling Mill Company, Pipe Sales Division, 481 Curtis Street, Middletown, Ohio.

ARMCO

**SPIRAL WELDED PIPE**

## Rogers Paper Mfg. Co. Has Peak Year

The year 1941 will probably prove to have been the most eventful and constructive in the long history of The Rogers Paper Manufacturing Company, with mills and offices at Manchester and Goodyear, Conn. This was reported by S. M. Silverstein, vice president and general manager, as the company entered the tenth year in its second century of continuous operation.

Starting in 1935, the program of consolidation, rehabilitation and expansion was completed in 1941. The Manchester mill, located at Mill and Oakland streets produces specialty plastics and is the site of the main office. The Goodyear mill manufactures electrical insulation, formerly made in the Manchester East and West mills, which were dismantled and sold during 1941.

Present employment is at an all time peak of approximately 230. Labor rates were increased an average of 15% during the year, establishing the highest schedules in the history of the company. Starting in January, the company is introducing a trial cost of living wage adjustment plan in the endeavor to provide some protection against excessive increases in the cost of living.

On January 15, each employee received an attractive service pin based on net length of service with the company. Five men have been given special recognition for the longest periods of service. Two of these men, William J. Patterson, and John Humphrey, with 36 years and 35 years of service, respectively, both glaze roll operators at Goodyear, received 35 year gold service pins. Gilbert Graham, a Goodyear glaze roll operator with 28 years service, Hugh A. McIntyre in charge of the Goodyear Inspection Department, with 27 years service, and Herman E. Preiss, a mechanic in the Manchester mill, with 27 years service, were awarded 25 year gold service pins. Each of these five men were also presented with a gold watch, at a luncheon given in their honor.

With records of more than 20 years, Thomas Armstrong, Thomas H. Johnston, John Kempes, Albert V. Lindsay and Henry F. Quinn received 20 year gold service pins.

Although not directly on the Rogers payroll as an individual, Robert D. Wilson of Manchester, received special recognition for the many years he and his organization have served the company, by the award of a special 30 year service pin.

During the past month, permanent flag poles have been erected at each mill and the flag of our country flies each day over the names of those Rogers employees who have been or are now in the armed forces of the United States.

Each employee also received an identification pass with his photograph and an identification nameplate which are to be on their person at all times he is in the mills. A new safety program has also been inaugurated with the award of safety emblems and the formation of the Rogers Safety Club.

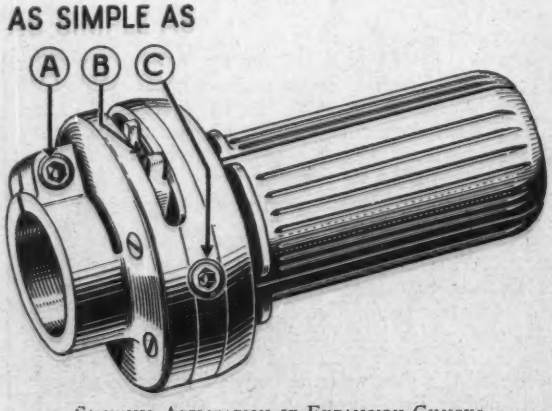
The luncheon on January 15 was held at the Hotel Sheridan in Manchester. In addition to Messrs. Patterson, Humphrey, Graham, McIntyre and Preiss, who received their watches, others present included the five officers of Oak Lodge No. 43, International Brotherhood of Paper Makers, Frank P. Andrews, president; Joseph Kieltyka, vice president; John G. Wolfe, Jr., financial secretary; John A. Kaczor, corresponding secretary and Irving G. Finley, treasurer. The company executives present included R. F. Hawley, comptroller; S. A. Brown, production manager; T. H. Johnston, Sr., production adviser; and S. M. Silverstein, vice president and general manager who made the presentations.

GET RECOGNITION FOR LONG SERVICE
Bottom:—Gilbert Graham, William J. Patterson, Herman E. Preiss.
Top:—Hugh A. McIntyre, John Humphrey.

## Efficiency Expansion Chucks

The Efficiency Expansion Chucks made by the Efficiency Engineering Company, 2116 Barry avenue, Chicago, Ill., include numerous exclusive features. Among these features are the following:—Both shaft and core are positively locked together; Perfect alignment is assured; Back lash and slipping are eliminated; Side run is minimized; Solid and positive drive; Equally effective for returnable, nonreturnable or metal cores; No lefts or rights—Each chuck of a pair is the same; Withstands unlimited tension.

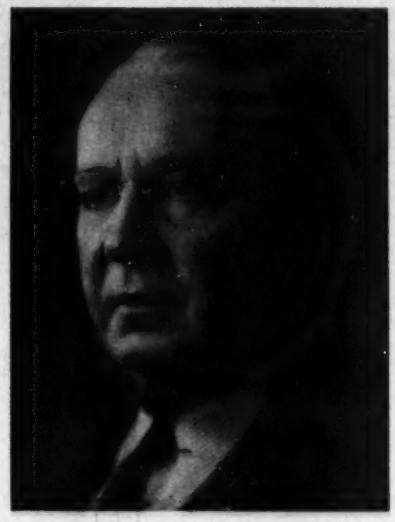
The simplicity of the Efficiency Expansion Chucks may be observed from the following instructions:—A—To lock chuck at proper position on shaft, insert hex wrench and tighten down socket bolt A firmly. B—To lock roll to shaft insert flat bar tool at B and pull upward firmly. C—To lock expansion, insert hex wrench and tighten socket bolt C.




SHOWING APPLICATION OF EXPANSION CHUCKS

## O. F. Swanson Writes Pulp Review

An excellent likeness is presented herewith of O. Frederick Swanson, who, for about a quarter of a century past, has furnished the review of the pulp market for the Annual Review and Convention Number of the PAPER TRADE JOURNAL. Mr. Swanson has a wide circle of friends and is generally recognized as one of the most experienced men in the pulp and paper industry in the country. He joined the Pulp and Paper Trading Company and J. Andersen & Co., 21 E. 40th street, New York, about twenty-five years ago as a salesman; later he was made sales manager and is now general manager of these concerns.



O. FREDERICK SWANSON

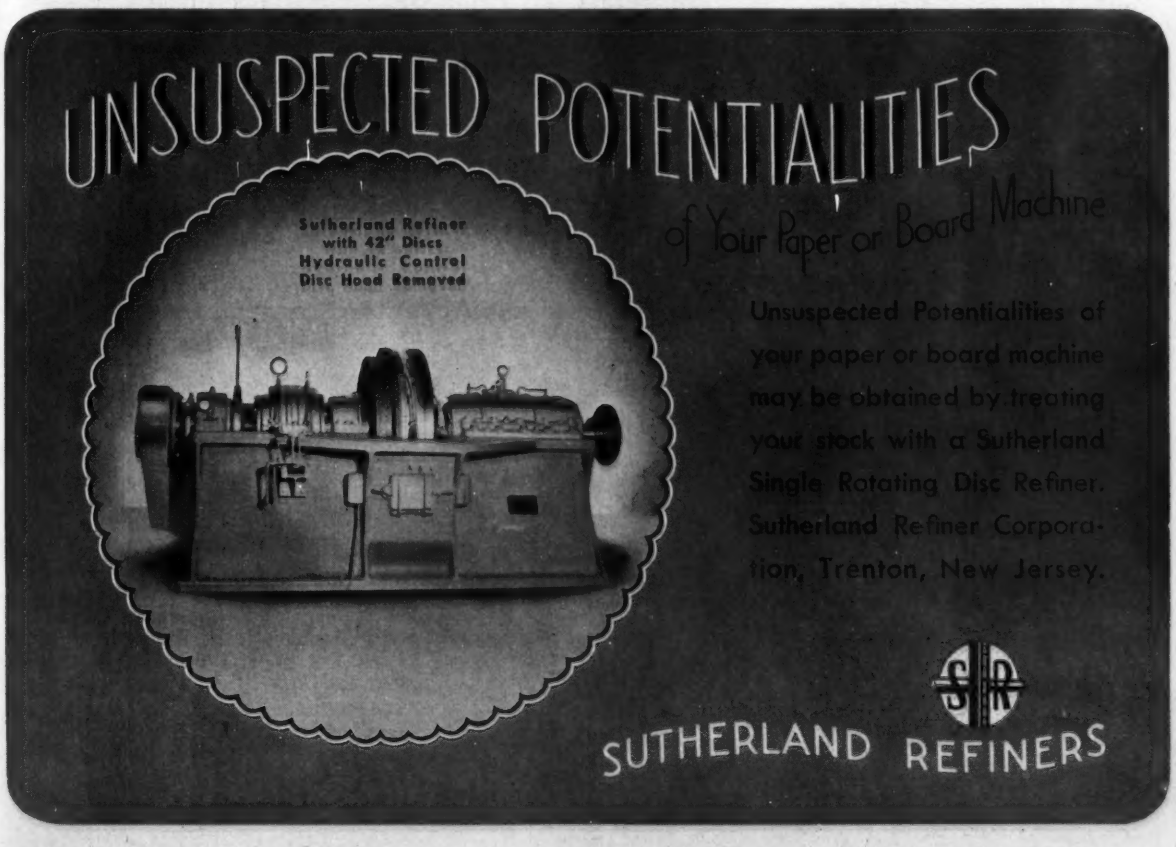
Mr. Swanson will write the review of pulp for the Annual Review Number of the PAPER TRADE JOURNAL to be issued next week in connection with the annual convention of the American Paper and Pulp Association.

Mr. Swanson comes from an old pulp and paper manufacturing family. His father, Peter Olof Swanson, at his death in 1923 at Gransholm, Sweden, was referred to by the *Svensk Pappers-Tidning (The Swedish Paper Journal)* as "one of the most distinguished men in the history of the Swedish paper industry during the last fifty years."

Before coming to New York, Mr. Swanson was in the manufacturing end of the pulp and paper industries in the East and Middle West.

## Noble & Wood Elect Officers

HOOSICK FALLS, N. Y., February 9, 1942—The annual meeting of the Noble & Wood Machine Company was held this week at which directors and officers were chosen. The directors elected include C. W. Noble, Henry F. Cramer, Henry S. LaPan, Dr. C. E. Shaw, C. E. Shaw, Jr., Harry N. Weir and Herbert Hamilton. Officers elected were C. W. Noble, president; Dr. Shaw, vice president; Henry Cramer, secretary, and Harry N. Weir, treasurer and general manager. Mr. Hamilton was re-elected assistant treasurer.


UNSUSPECTED POTENTIALITIES
of Your Paper or Board Machine
Sutherland Refiner
with 42" Discs
Hydraulic Control
Disc Hood Removed
Unsuspected Potentialities of your paper or board machine may be obtained by treating your stock with a Sutherland Single Rotating Disc Refiner. Sutherland Refiner Corporation, Trenton, New Jersey.
SUTHERLAND REFINERS

## OPA Sets Board Prices for West

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., Feb. 11, 1942—Paper merchants West of the Rocky Mountains who distribute paperboard were asked today by Leon Henderson, Administrator of the Office of Price Administration, to agree voluntarily not to exceed the regular mark-up customarily charged by them in the period October 1, 1940-September 30, 1941.

The request covers charges on plain chip, single manila lined chip and white patent coated news and other grades of chip and newsbase paperboards.

As producers of paperboard West of the Rockies by voluntary agreement have refrained from charging prices above those of July, 1941, cooperation by paper merchants, as asked by Mr. Henderson, will have the effect of holding distributors' prices to the same levels as those prevailing in the third quarterly period of 1941.

Price Administrator Leon Henderson has issued the following order to all paper merchants west of the Rocky Mountains:—

"The Office of Price Administration is charged with the prevention of inflationary prices. The maximum prices at which manufacturers may deliver plain chip board, single manila lined chip board and white patent coated newsboard, as well as all other grades of chip and news base paperboards have been established by voluntary agreements between the individual manufacturers and this Office, for the first three months of 1942, or until prior notice, as follows:

| | | Count | |
|---|---|---|---|
| Plain Chip | Regular | 40 to 85 inclusive | $50.00 per ton |
| Single Manila Lined Chip | Regular | 50 to 100 inclusive | $63.50 per ton |
| White Patent Coated News | Caliper | .016 to .019 inclusive | $80.00 per ton |

"The differentials for other grades of chip and news base paperboards, lesser quantities, and for light and heavy weights shall be those in effect as of April 1, 1941.

"This Office requests your cooperation by adhering to the prices as set forth above when purchasing any of the above items. This Office further requests that when reselling said items, you do not exceed the prices as set forth in the attached agreement.

"In this emergency, I believe this Office is entitled to your fullest cooperation. Accordingly, we would appreciate your signifying your willingness and intention to cooperate by signing and returning the attached statement at your earliest convenience."

## OPA "Freezes" Paper Prices

WASHINGTON, D. C., February 11, 1942—The Office of Price Administration has sent the following request and order to paper merchants dealing in fine papers:

"The Office of Price Administration is charged with the prevention of inflationary prices.

"Manufacturers' prices of gummed papers, plain envelopes, manila envelopes, kraft envelopes, shipping tags, and glazed and plated papers have been frozen as of December 15, 1941.

"We request a list of the various grades and qualities of the above mentioned items that you are purchasing and reselling, stating the names of your suppliers and your present purchasing prices. We can assure you that any information you will furnish us regarding prices and sources of supply will be treated as strictly confidential.

"When reselling any of the above items, we request that you do not exceed the prices published or instituted by the manufacturers on or before December 15, 1941, plus the following mark-ups.

MERCHANTS' MARK-UPS FOR GUMMED PAPERS (ALL GRADES)

(The Base is the manufacturers' price per lb. for 4 cartons)

| | | |
|---|---|---|
| 1 package to less than 1 carton | Base price per lb. | +60% |
| 1 carton to less than 4 cartons | Base price per lb. | +50% |
| 4 cartons to less than 16 cartons | Base price per lb. | +35% |
| 16 cartons to less than 5,000 lbs. | Base price per lb. | +25% |
| 5,000 lbs. to less than 10,000 lbs. | Base price per lb. less 3% | +17% |
| 10,000 lbs. to less than 36,000 lbs. | Base price per lb. less 4% | +12½ |
| 36,000 lbs. and over | Base price per lb. less 5% | + 8% |

"When selling in broken package lots, the following may be added:—

| 1 Quire to Less Than 1 Package | Less Than 1 Quire |
|---|---|
| Add 50% to the per lb. package price. | Add 100% to the per lb. quire price. |

MERCHANTS' MARK-UPS FOR ENVELOPES (ALL GRADES)

(The Base is the manufacturers' price per 1,000 envelopes for 1 full carton)

| | | |
|---|---|---|
| Less than 1 carton | Base price per 1,000 envelopes | +60% |
| 1 carton to less than 5 cartons | Base price per 1,000 envelopes | +40% |
| 5 cartons to less than 10 cartons | Base price per 1,000 envelopes | +30% |
| 10 cartons and over | Base price per 1,000 envelopes | +20% |

MERCHANTS' MARK-UPS FOR SHIPPING TAGS (ALL GRADES)

(The Cost is the manufacturers' price per 1,000 tags for the respective quantities listed below)

| | | |
|---|---|---|
| 1,000 tags to less than 10,000 tags | Cost price per 1,000 tags | +60% |
| 10,000 tags to less than 30,000 tags | Cost price per 1,000 tags | +40% |
| 30,000 tags to less than 50,000 tags | Cost price per 1,000 tags | +28% |
| 50,000 tags and over | Cost price per 1,000 tags | +15% |

MERCHANTS' MARK-UPS FOR GLAZED AND PLATED PAPERS

(The Cost is the manufacturers' price per lb. for the respective quantities listed below)

| | | |
|---|---|---|
| 1 package to less than 1 carton | Cost price per lb. | +60% |
| 1 carton to less than 4 cartons | Cost price per lb. | +50% |
| 4 cartons to less than 16 cartons | Cost price per lb. | +35% |
| 16 cartons to less than 5,000 lbs. | Cost price per lb. | +25% |
| 5,000 lbs. to less than 10,000 lbs. | Cost price per lb. | +17% |
| 10,000 lbs. to less than 36,000 lbs. | Cost price per lb. | +12½% |
| 36,000 lbs. and over | Cost price per lb. | + 9% |

"When selling in broken package lots, the following may be added:—

Less Than 1 Package
Add 50% to the per lb. package price.

"In this emergency, we believe this Office is entitled to your fullest cooperation. Accordingly, we would appreciate your signifying your willingness and intention to cooperate by signing and returning the attached statement at your earliest convenience, and by following this statement as soon as practical with the price lists and other data requested above."

## To Discuss Employment

Of special interest to executives and personnel managers, during "Paper Week," will be a discussion sponsored by the committee on manufacturing of the American Paper and Pulp Association relating to employment and personnel problems brought on by War conditions. This meeting is scheduled for 10:30 A. M., Thursday, February 19, 1942, and will be held in the Le Perroquet X Suite of the Waldorf-Astoria.

S. B. Copeland, president of the Northwest Paper Company, will open the discussion and be followed by two other speakers. The meeting will then be thrown open for questions and general discussion. George Adams, personnel director of the International Paper Company, will act as chairman.

The War and the Selective Service Act are bringing about important changes in the industrial relations field and it is felt this meeting will be of particular value to Executives in the industry.

## OPA Amends Rag Prices

WASHINGTON, D. C., February 11, 1942—A provision for transportation allowances to rag-sellers, requirements for monthly reports, inclusion of additional grades and an amended definition of "broker" are included in Amendment No. 2 to Price Schedule No. 47 for old rags, effective immediately and announced today by Leon Henderson, Administrator of the Office of Price Administration.

Appendix A to Section 1347.110 and Appendix B to Section 1347.111 are modified to provide that maximum delivered prices for certain kinds and grades of rags shall be the maximum f.o.b. prices, plus transportation charges. If shipments are by public carrier, actual transportation charges are added. If transportation to the buyer is by the seller's vehicle, the amount which may be added is set forth specifically. When a seller delivers rags to a buyer in the seller's own vehicle or in the vehicle of a private carrier under his ownership or control, charges will be computed from the point where the load is fully completed for shipment to the buyer.

In no instance where a seller delivers rags in his own vehicle to a team track or public shipping point for shipment to a buyer may he add to the maximum prices any additional charge.

Three new grades of rags are added to Section 1347.110; No. 1 laundry bags, maximum price $135.00; No. 2 laundry bags, maximum price $100.00; and old manila rope, maximum price $115.00.

A further provision establishes maximum prices for other grades of roofing rags not covered in the schedule. For such rags, used in the manufacture of roofing material and sold between October 1 and October 15, 1941, the maximum price shall be the highest price per ton charged by the seller during that period, but in no event may this price exceed $31.00. For any grade of such rags not sold during that period, prices in excess of $19.00 per short ton are to be subject to the approval of OPA. This provision applies to graded rags and does not affect sales of mixed rags.

The amendment also requires sellers of old rags to make monthly reports on Form 147.2 of the tonnage of old rags sold by them and also reports as to their inventories on hand for January, 1942, and for each succeeding month. These sellers also must file similar monthly reports on or before February 10 for each month in the period between December 1, 1939 and January 31, 1942.

Mr. Henderson emphasized, however, that those grades of roofing rags already covered by the schedule are not affected by this provision.

It is required that consumers of old rags shall file the same reports as sellers, their reports being made on Form 147.3. These forms may be had on application to the OPA offices in Washington.

A "broker" as defined in Section 1347.108 of the schedule is one who engaged in the business of brokerage or jobbing old rags between October 1, 1940 and October 1, 1941. Under the amendment, the time period, "October 1, 1940 to October 1, 1941," is deleted.

The provision for broker's allowances is modified by removal of the requirement that the allowance be that customarily charged or the specific allowance set forth in the schedule, whichever is less, to provide that the allowance be not in excess of amounts specified in the amendment, which are carried over unchanged from the schedule as it existed originally.

# FINANCIAL NEWS

### New York Stock Exchange

High, Low and Last for Week Ending February 11, 1942

| | High | Low | Last |
|---|---|---|---|
| A. P. W. | .... | .... | .... |
| Armstrong Cork Co. | 25⅞ | 24½ | 24½ |
| Celotex Corp. | 7⅞ | 7¼ | 7¼ |
| Celotex Corp., pf. | 70 | 70 | 70 |
| Certain-Teed Products Corp. | 2⅛ | 2 | 2 |
| Certain-Teed Products Corp., pf. | 29 | 26 | 26 |
| Champion Paper & Fibre Co. | 17 | 16¾ | 16¾ |
| Champion Paper & Fibre Co., pf. | 100 | 100 | 100 |
| Congoleum-Nairn Co. | 16 | 15½ | 15⅞ |
| Container Corp. of America | 12¾ | 12⅛ | 12⅛ |
| Continental-Diamond Fibre Co. | 8 | 7⅞ | 7¾ |
| Crown-Zellerbach Co. | 11⅞ | 11¼ | 11⅜ |
| Crown-Zellerbach Co., pf. | 84½ | 83 | 83 |
| Flintkote Co. | 10¼ | 9½ | 9¾ |
| Robert Gair | 2 | 1⅞ | 1⅞ |
| Robert Gair, pf. | 10 | 9¾ | 9¾ |
| International Paper Co. | 14¾ | 13¼ | 13¾ |
| International Paper Co., pf. | 59¾ | 57 | 57¾ |
| Johns-Manville Corp. | 57¾ | 54¾ | 55¼ |
| Johns-Manville Corp., pf. | 123 | 122 | 122 |
| Kimberly Clark Corp. | .... | .... | .... |
| MacAndrews & Forbes | 20⅞ | 20⅞ | 20⅞ |
| MacAndrews & Forbes, pf. | .... | .... | .... |
| Masonite Corp. | 26⅞ | 26¼ | 26⅞ |
| Mead Corp. | 7⅛ | 6½ | 6½ |
| Mead Corp., pf. | .... | .... | .... |
| Paraffine Companies, Inc. | 25½ | 25 | 25 |
| Paraffine Companies, Inc., pf. | .... | .... | .... |
| Rayonier, Inc. | 10¾ | 10⅛ | 10⅛ |
| Rayonier, Inc., pf. | 26 | 25 | 25 |
| Ruberoid Co. | 17 | 16½ | 16½ |
| Scott Paper Co. | 34 | 33 | 33 |
| Scott Paper Co., pf. | .... | .... | .... |
| Sutherland Paper Co. | 18 | 17½ | 18 |
| Union Bag & Paper Corp. | 9 | 8⅜ | 8½ |
| United Paperboard Co. | 3½ | 3⅜ | 3⅜ |
| U. S. Gypsum Co. | 46 | 44 | 44 |
| U. S. Gypsum Co., pf. | 172 | 172 | 172 |
| West Virginia Pulp & Paper Co. | 18 | 17¼ | 17¼ |

### New York Curb Exchange

High, Low and Last for Week Ending February 11, 1942

| | High | Low | Last |
|---|---|---|---|
| American Box Board Co. | 4 | 3⅛ | 3⅛ |
| Brown Co., pf. | .... | .... | .... |
| Great Northern Paper Co. | 35 | 34¾ | 34¾ |
| Hummel-Ross Fibre Corp. | .... | .... | .... |
| National Container Corp. | .... | .... | .... |
| St. Regis Paper Co. | 2½ | 2⅛ | 2⅛ |
| St. Regis Paper Co., pf. | 117½ | 115 | 115 |
| Taggart Corp. | 3⅛ | 2¾ | 2¾ |

## Lake St. John Profits Up

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 9, 1942—A net profit of $104,063 for 1941, as compared with $112,118 in 1940, is reported by the Lake St. John Power and Paper Company, Limited, one of the constituent companies of St. Lawrence Corporation. The 1941 profit is equivalent to $5.78 per share on 18,000 shares of $6 non-cumulative preferred, while in 1940 it was equal to $6.22 per share.

Operating profit, after depletion was $1,208,311 against $1,213,717. Deductions were: depreciation $556,426, same as in 1940; bond and debenture interest $477,821 against $484,174; and tax provision $70,000 against $61,000.

The year's net profit was added to previous surplus of $104,834, together with $10,568 profit on redemption of bonds for sinking fund, making total surplus of $219,466 carried forward.

## Brompton Nets $2.78

The Brompton Pulp and Paper Company, Ltd. (Canadian currency) for 1941, reports a net profit, after taxes and reserves, of $832,746, equal to $2.78 a share, against $629,135, or $2.10 a share, in 1940. Net working capital at December 31 was $3,460,362, against $2,831,728.

## St. Lawrence Profits Off

MONTREAL, Que., February 9, 1942—Slightly reduced operating and net profits are reported in the financial statement of the St. Lawrence Paper Mills Company, Limited, for 1941. The balance sheet position, however, has been considerably strengthened, a bank loan of $540,700 having been eliminated, cash having risen from $5,552 to $757,442 and net working capital having risen from $2,308,324 to $3,028,432. Current assets (including a Hearst account of $536,278, regarding the value of which the auditors again state they are not in a position to express an opinion) stand at $3,829,162 vs. $3,550,448 a year ago (including $474,138 Hearst account). Current liabilities have fallen from $1,242,124 to $800,730.

Operating profit at $1,439,404 compared with $1,618,804 a year ago. After depreciation, depletion and income taxes, the last at $325,000 vs. $267,000, net profit of $545,629 was equal to 3.98% on the 6% $100 preferred. This compares with $578,290, or 4.14% for 1940. After payment of 3.75%, which absorbed $521,765, an amount of $23,864 was added to earned surplus, which now stands at $563,581.

## Taggart Profits Higher

Consolidated net profit of the Taggart Corporation for 1941 amounted to $820,130, equal, after preferred dividend requirements, to 91 cents a common share, against $548,774, or 58 cents a share, in 1940. The profit was the largest since 1929. Sales were the largest on record at $11,147,435, an increase of 33.7 per cent over $8,338,388 in 1940, R. K. Ferguson, the president, reported.

During the year a long-term contract was entered into with Chesapeake-Camp Corporation of Franklin, Va., for purchase of materials used in the company's bag departments, and Taggart has built a large bag factory at Franklin on the site adjacent to Chesapeake-Camp's paper-manufacturing plant.

## Masonite Nets $458,598

The Masonite Corporation for the sixteen weeks to December 20, reports a net profit, of $458,598, equal after preferred dividends to 76 cents each on 539,210 common shares, against 343,257, or 58 cents a share, for similar period in previous year; sales, $4,908,541, against $3,256,388. The company's provision for Federal and State income taxes was $1,244,900 for 1941 period, of which $638,000 was set aside for Federal excess profits tax and $200,000 for contingent tax increases.

## Johns-Manville Nets $6.66

Consolidated net earnings of Johns-Manville Corp. in 1941 amounted to $5,967,145, compared to $5,882,071 in 1940, according to the company's annual report released to stockholders last night by Lewis H. Brown, president. After payment of preferred dividends, earnings in 1941 amounted to $6.66 a common share and compares with $6.35 in 1940.

## Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 11, 1942—The Government Printing Office has received the following bids for 57,400 pounds of 32 x 42 buff sulphite writing paper: Cauthorne Paper Company, Inc., 8.25 cents; Paper Corporation of U. S., 8.5 cents; and Whitaker Paper Company, 8.14 cents.

For 115,000 pounds of 32 x 42 blue sulphite writing paper: Cauthorne Paper Company, Inc., 8.25 cents; Paper Corporation of U. S., 8.98 cents; and Whitaker Paper Company, 8.14 cents.

For 7,680 pounds of 33 x 34, 100% rag, white parchment deep paper: Walker Goulard Plehn Company, Inc., 27.95 cents; R. P. Andrews Paper Company, 27.62 cents; Stanford Paper Company, 42 cents; Old Dominion Paper Company, 28.89 cents; Paper Corporation of U. S., 24.8 cents; Mudge Paper Company, 27.62 cents; and Whitaker Paper Company, 40.25 cents.

For 88,500 pounds of 25% rag, 23 x 36 white bond paper: Paper Corp. of U. S., 14.44 cents; and Whitaker Paper Company, 13.9 cents.

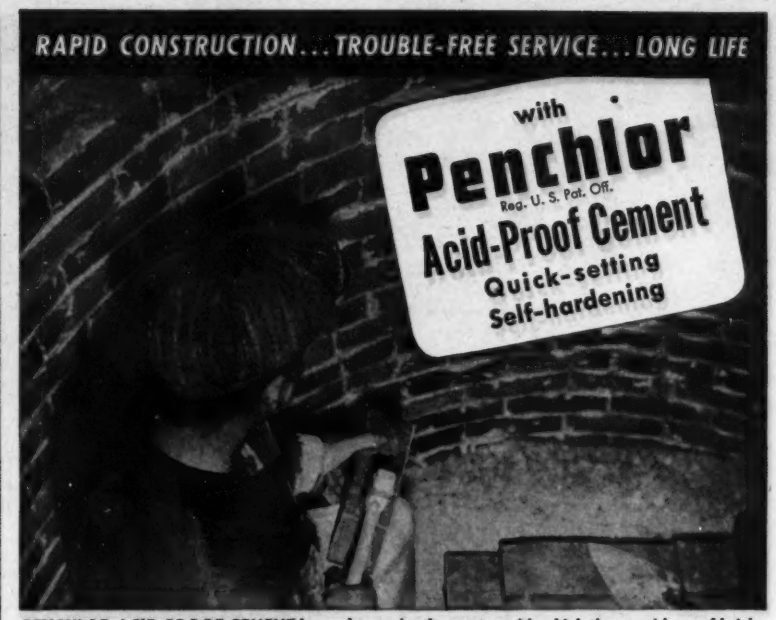
For 235,092 pounds of 32 x 52½ wood manila paper: Mudge Paper Company, 5.64 cents; Paper Corporation of U. S., 5.48 cents; and Marquette Paper Company, 5.75 cents.

For 150,000 pounds of white sulphite manifold paper in 24 inch rolls: Import Paper Company, 8.45 cents less 2%; Mathers-Lamm Paper Company, 10.99 cents and North American Pulp and Paper Company, 12 cents.

For 400,000 pounds of white sulphite writing paper in 32 inch rolls: R. P. Andrews Paper Company, 6.79 cents; Barton, Duer & Koch Paper Company, 7.05 cents; and Marquette Paper Company, 8.15 cents.

For 45,600 pounds of 22¼ x 32¼ M.F. book paper: Mudge Paper Company, 7.02 cents; R. P. Andrews Paper Company, 7.03 cents; Marquette Paper Company, 6.95 cents; Paper Corporation of U. S., 7.08 cents; and Mead Sales Company, 7.09 cents.

For 30,000 pounds of 38 x 48, 100% rag, cream white antique paper: Whitaker Paper Company, 26.6 cents; Barton, Duer & Koch Paper Company, 20 cents; R. P. Andrews Paper Company, 20.87 cents; Cauthorne Paper Company, 23 cents; and Paper Corporation of U. S., 22 cents.


**PENCHLOR ACID-PROOF CEMENT** is used to make the mortar with which these acid-proof bricks are being laid in lining a tank to store hot dilute sulphuric acid at the chemical by-products plant of the Chesapeake-Camp Corp., Franklin, Va. Construction Contractors: A. Lynn Thomas Co., Inc., Richmond, Va.

Here is another installation where *Penchlor Acid-Proof Cement* will prove its worth in years of dependable service. This quick-setting sodium silicate cement was chosen because of its proven record of highly satisfactory service under severe acid conditions . . . a record that includes successful application in most of the important chemical plants throughout the United States, in steel mills, in paper and pulp mills, oil refineries and smelting plants.

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# PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

Henry J. Berger
EDITOR

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## COMING EVENTS IN PAPER INDUSTRY

AMERICAN PAPER AND PULP ASSOCIATION, Sixty-fifth Annual Convention and meeting, Waldorf-Astoria Hotel, New York, February 16-20.

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Convention, Commodore Hotel, New York, February 16-19.

SALESMEN'S ASSOCIATION OF THE PAPER INDUSTRY, Annual Meeting and Luncheon, Waldorf-Astoria Hotel, New York, Tuesday, February 17.

NATIONAL PAPER TRADE ASSOCIATION OF THE UNITED STATES, Convention, Waldorf-Astoria Hotel, New York, February 16-19.

THE NEW YORK ASSOCIATION OF DEALERS IN PAPER MILLS' SUPPLIES, Annual Banquet, Commodore Hotel, New York, Tuesday, February 17.

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

## MANAGEMENT'S ROLE

The objectives recently stated by the President in which he fixed large numbers of ships, planes, tanks and other equipment required, foreshadowed an all-out war effort which will soon affect all business concerns and all citizens. In commenting on management's role in the actual mobilization of all the resources of the country, now being undertaken by Donald M. Nelson, chairman of the War Production Board, the *Washington Review,* published by the Chamber of Commerce of the United States points out that, "The part business management is to play in the prosecution of the war effort is becoming a question of increasing importance. Heretofore, management has shouldered the burden of erecting plants and creating facilities requisite for national development. It has profited by its successes and paid for its mistakes."

Directing attention to what it terms a strange conception, the article states that, "Now, under the pressure of war needs, a strange new conception of management is being advanced. On the one hand, government, by regulation and direct participation, is attempting to exercise the functions of management on an increasing scale. And, furthermore, labor has begun to demand a larger voice in the direction of industrial enterprise. This distribution of management functions is urged on the ground that it is needed to spur the war effort and step up industrial production. The specific objective appears to be to reorganize the management of industry after a new pattern, at least for the duration of the emergency. The need of concentrating effort to attain the greatest possible results is only too obvious. Time is too precious to be wasted by working at cross purposes. Cooperation is more than necessary. It is imperative. But, as has been said, the only way of cooperation is to cooperate. Shifting the functions of management is no way to attain desired ends. We must make the most of the resources we have, rather than draw a new economic pattern. The same question will arise when the war ends and industry returns to its normal tasks. The strain put upon it, for a time at least, by the demands of reconstruction will be little less than that imposed by war itself.

In commenting on the subject of an industrial war program, the *Washington Review* says in part: "The all-embracing character of the undertaking is now becoming evident. Here are some of the latest steps to be taken: From 50 to 60 industries, which are the main sources of war production, are under study with a view to converting them to war uses. The automobile industry probably will set the pattern to be followed. Simplified plans for enlisting little business in the war production effort have been drawn. Needs of smaller industries carrying on essential activities not directly related to war production will be taken into account. Authority to ration goods and commodities has been given the office of Price Administration. For this it is apparent that the recruiting is to be universal. . . . The small business man who makes no effort to tie in with the war production plan may go by the board unless he can show that his industry or business is needed for other than war effort, or to sustain the national welfare. Application may be made for priority treatment. Blanks may be obtained from the small business section of the Production Requirements Branch of the War Production Board. . . . The announcement that 50 or 60 other important industries are under study may be an indication that the Production Division of the Board intends to rely to a greater extent upon industrial organizations in carrying out plans. Contract distribution field offices now total 113. Manufacturers are urged to send to the offices nearest them information as to the equipment of their plants and the types of products they make."

Management expansion is taking place so rapidly that strict attention must be given to organization principles, Alvin E. Dodd, president of the American Management Association, said last week. He reported a heavy demand for the "Ten Commandments of Good Organization", recently issued by his association in two-color poster form. "Executives are being loaded with heavier responsibilities and new executive positions are being created all the time" Mr. Dodd said, "and companies in almost all industries throughout the country have written to the association asking for as many as 500 or 600 copies." The "Ten Commandments of Good Organization"

are as follows: "(1) Definite and clean-cut responsibilities should be assigned to each executive. (2) Responsibility always should be coupled with corresponding authority. (3) No change should be made in the scope of responsibilities of a position without a definite understanding to that effect on the part of all persons concerned. (4) No executive or employee occupying a single position in the organization should be subject to definite orders from more than one source. (5) Orders never should be given to subordinates over the head of a responsible executive. Rather than do this the officer in question should be supplanted.

(6) Criticisms of subordinates should, whenever possible, be made privately, and in no case should a subordinate be criticized in the presence of executives or employees of equal or lower rank. (7) No dispute or difference between executives or employees as to authority or responsibilities should be considered too trivial for prompt and careful adjudication. (8) Promotions, wage changes and disciplinary action always should be approved by the executive immediately superior to the one directly responsible. (9) No executive or employee should ever be required or expected to be at the same time an assistant to, and critic, of another. (10) Any executive whose work is subject to regular inspection should, whenever practicable, be given the assistance and facilities necessary to enable him to maintain an independent check of the quality of his work".

## Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

| Current Weeks, 1942 | | Corresponding Weeks, 1941 | |
|---|---|---|---|
| Dec. 27, 1941 (Holiday Week) | 79.4 | | |
| January 3 | 102.8 | January 4 | 80.8 |
| January 10 | 103.2 | January 11 | 87.1 |
| January 17 | 103.9 | January 18 | 86.3 |
| January 24 | 104.1 | January 25 | 87.4 |
| January 31 (Preliminary) | *103.2* | February 1 | 86.4 |
| | | December 28, 1940 | 61.4 |

COMPARATIVE MONTHLY SUMMARIES

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July |
|---|---|---|---|---|---|---|---|
| 1940 | 89.1 | 84.7 | 82.3 | 84.3 | 90.0 | 92.1 | 85.3 |
| 1941 | 85.6 | 89.7 | 92.2 | 96.0 | 98.7 | 99.3 | 94.2 |
| 1942 | *103.4* | ... | ... | ... | ... | ... | ... |

| Year | Aug. | Sept. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|
| 1940 | 85.1 | 81.5 | 85.5 | 84.9 | 80.9 | 85.6 |
| 1941 | 101.0 | 99.6 | 105.2 | 106.0 | 100.2 | 97.3 |
| 1942 | ... | ... | ... | ... | ... | ... |

COMPARATIVE YEARLY SUMMARIES

| | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 |
|---|---|---|---|---|---|---|---|---|
| Year to Date | 64.3 | 75.5 | 89.5 | 63.2 | 76.0 | 89.5 | 85.6 | *103.4* |
| Year Average | 69.9 | 80.4 | 79.8 | 71.5 | 83.4 | 85.6 | 97.3 | ... |

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1937 | 80 | 86 | 86 | 88 | 85 | 77 | 66 | 74 | 69 | 65 | 55 | 45 | 73 |
| 1938 | 54 | 60 | 61 | 57 | 58 | 56 | 57 | 66 | 66 | 70 | 65 | 59 | 61 |
| 1939 | 60 | 67 | 71 | 69 | 64 | 67 | 63 | 72 | 74 | 34 | 81 | 71 | 70 |
| 1940 | 71 | 70 | 69 | 70 | 76 | 79 | 72 | 74 | 73 | 79 | 77 | 71 | 73 |
| 1941 | 75 | 81 | 82 | 83 | 84 | 88 | 86 | 94 | 94 | 99 | 98 | 93 | 88 |
| 1942 | *102* | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

Week ending Dec. 27, 1941— 76
Week ending Jan. 3, 1942— 86
Week ending Jan. 10, 1942—101
Week ending Jan. 17, 1942—102
Week ending Jan. 24, 1942—101
Week ending Jan. 31, 1942—101

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Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

# Methods of Reducing Chlorine Consumption*

By T. W. Toovey[1]

The war has resulted in a drastic reduction of the amount of chlorine available to the pulp, paper, and paperboard industry. The industry in meeting this reduction, has had to set up new standards and methods of bleaching. In response to the request of the Pulp Purification Committee of the TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, many TAPPI members have sent in the results of their investigations. These results have been compiled for the benefit of the industry.

In the past, the aim of the industry has been to attain the highest brightness compatible with chlorine economy and a retention of the unbleached strength properties. The problem that now faces the industry is one of obtaining the maximum efficiency out of the chlorine available to the industry in attaining a given brightness.

## Sulphite Pulp Mills

### No Reports from Soda or Sulphate Pulp Mills

The preparation of the pulp prior to bleaching is naturally the first thought in obtaining chlorine economies. Unfortunately no information has been offered either by the sulphate or soda pulp mills as to whether steps have been taken to lower the bleach requirements of their pulps. Reports from the sulphite pulp mills indicate that this has been investigated and carried out. By altering the cooking procedure a reduction of the chlorine requirement from 5.5 to 4.5% has been effected in one case.

### Reduction of Bleachability

In another, it was found that with a combination of a softer cooked pulp and an arbitrary reduction in the amount of hypochlorite in the second stage, a decrease of about 25% in chlorine consumption with a drop in brightness of only two to four points was obtained. However, the limit in reduction of bleachability has already been reached. Further decreases would result in large losses in pulp strength and yield. Also, the determination of cooking time becomes more critical, and a few minutes overcooking will result in a "burned cook" with a correspondingly poor pulp. Where changes in acid concentration are possible, it has been found that by using a stronger acid and increasing the steam flow during the first three hours of cooking, a lowering of the chlorine requirement has been accomplished without lengthening the cooking time or raising the temperature. By using such a procedure the yield of pulp per cubic foot of digester space and the strength of the finished pulp have not been decreased.

Chlorine is used mainly in two forms: (1) chlorine as the element in a gaseous form and (2) chlorine in the form of hypochlorite. As the hypochlorite is generally manufactured as a separate process before being used, it might be as well to consider this first, with the view to possible economies.

## Hypochlorite

The temperature and rate of chlorination are perhaps two of the most important factors in efficient bleach manufacture; 30 deg. C. (86 deg. F.) is generally considered to be about the maximum desirable temperature for chlorination without the formation of excess chlorides. There seems to be a rather critical point of decomposition at 40 deg. C. (104 deg. F.). The rate of chlorination can probably be subdivided into three parts: the start; the finish; and the over-all chlorination rate. It is advisable to use a slow rate of chlorination at the beginning and at the end when the lime is nearly used up in order to obtain good control. The initial lime does not absorb the chlorine as readily as it does after it is partially chlorinated. Of course towards the end, there is not the quantity of free lime present to absorb the chlorine and so naturally the rate must be lowered and watched very carefully.

There is also a tendency at times during the chlorination of the lime slurry to add the chlorine too fast; although this would not be detected by free chlorine in the air it can be at the same time so rapid, that much of the chlorine goes into chlorides. This rate of chlorination must be learned more or less by experience and of course is dependent to a great extent on the degree and type of agitation as well as the temperature; but the final results can readily be determined by an analysis of the finished bleach liquor. With efficient agitation and circulation, temperature gives a pretty good control on the permissible rate of adding chlorine, and with this efficient circulation

* To be presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 16-19, 1942.

[1] Member TAPPI; Pulp and Paper Technologist, Pennsylvania Salt Manufacturing Co., Philadelphia, Pa.

or agitation it is believed that very few chlorides will be formed.

The stability of the bleach liquor is dependent on the pH of the liquor. The bleach liquor must be kept at a pH greater than 11.2 for complete stability. The bleach liquor which has been allowed to drop to a pH lower than this may be restabilized by the prompt addition of hydroxide of lime; however, such restabilized liquor should be used as soon as possible. For further reference to the influence of pH, the paper given by Rue and O'Neil is suggested as containing valuable information on this subject ["The Lime-Chlorine System in the Preparation of Calcium Hypochlorite," *Paper Trade J.* 109, no. 23:39-42 (Dec. 7, 1939)].

The washing of sludges after the settling and decantation of the clear liquor should be carried out for maximum efficiency. The number of washes used will depend on the apparatus available and the settling qualities of the lime used. A simple calculation of the depth of the sludge and the strength of the liquor will indicate the advisability and amount of washing required.

### Bleaching Stages

In the bleaching of wood pulps it has been necessary in the past, in order to obtain maximum efficiency together with high brightness, to divide the bleaching into several stages consisting of chlorination, alkaline treatment, and hypochlorite bleach. Generally speaking, it must be conceded that the more stages of bleaching that are used for obtaining a given brightness the greater is the chlorine saving. Even for as low a brightness as 74, a four-stage system is used in sulphite bleaching. This consists of chlorination, caustic soda neutralizing, high-density hypochlorite, and low-density hypochlorite bleaching. The effect of lowering the brightness required has been to alter the balance of these various stages. The greater the percentage of the total chlorine requirement used in the chlorination stage, the greater is the saving in chlorine. However, in order that the dirt count of the pulp does not become too high, a certain limit must be set on the amount of chlorine used in the chlorination stage in order that a sufficient amount of chlorine as hypochlorite can be used to bleach out the shives, bark, etc., present in the unbleached pulp.

In bleaching soda pulp it has been found that as the chlorine is reduced, better results are obtained by using a higher percentage of the total chlorine in the last stage. This amount should be enough so that the bleaching continues for about four hours. Lower

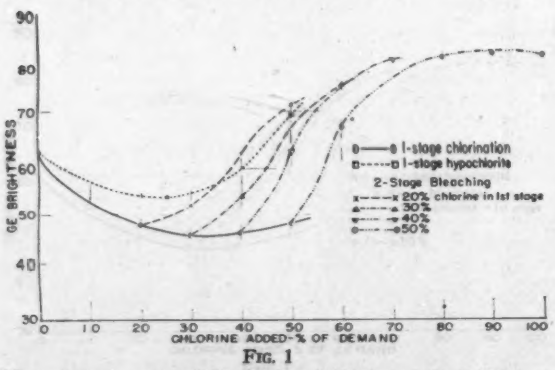


FIG. 1

**Effect of the Amount and Distribution of Chlorine on the Brightness of Spruce Sulphite Pulp**

temperature in the final hypochlorite stage seems to help also because it prolongs the hypochlorite bleaching time. For soda pulp, to obtain the best results from the reduced chlorine consumption the following points have been suggested:

1. pH control: An efficient pH control will give 2 to 4 points higher brightness. The pH should be maintained at about 9 in the hypochlorite stage.

2. Lower Temperature: Lower temperatures in the last stage always and in the first stage in cases where the chlorine reduction is beyond 20 to 30% are beneficial. In any case the temperature should not exceed 100 deg. F.

3. Reduce the chlorine in the first stage up to a 30% cut and use a simple two-stage hypochlorite where the cut is more than 30%.

Table I summarizes some of the results obtained with reduced chlorine consumption.

TABLE I.—BRIGHTNESS BASED ON LABORATORY RESULTS EXPECTED FROM VARIOUS CHLORINE CUTS

| % Chlorine Reduction | Brightness for Soda Pulp 1 | Brightness for Soda Pulp 2 | Brightness for Soda Pulp 3 |
|---|---|---|---|
| 0 | 77 | 73 | 72 |
| 20 | 72-74 | 70-71 | 68-70 |
| 30 | 66-67 | 66-69 | 65-68 |
| 40 | 58-60 | 64-66 | 62-64* |
| 50 | 56-58 | 59-61 | 57-59* |

* Two stage hypochlorite

For sulphite pulps when using chlorination, lime neutralization, wash and high-density hypochlorite bleach, a drop of 4 to 5 points in brightness from a 78 to 80 normal has been observed when a 20% cut in chlorine usage was instituted. It was found that for this 20% cut, a 35–65 chlorine ratio was best when a 10 deg. F. higher temperature in the last stage was used maintaining a pH of 9.0 to 9.5. Beyond a 20% chlorine cut, it has been shown that it is better from the viewpoint of brightness to bleach as much sulphite to 78–80 brightness as the supply of chlorine will permit and then use the remainder of the sulphite in the unbleached state. Beyond a 30 to 40% chlorine reduction a lower brightness than that of the unbleached pulp will be obtained. This point will be discussed later under the blending of pulps.

Figure 1 shows the effects of the various distributions of chlorine on the brightness of sulphite pulp. A comparison of spruce with hemlock pulp indicates there is in the main little difference between these two pulps in the general shape of the bleaching curves. The unbleached brightness and the brightness of the chlorinated pulps were, however, much lower for the hemlock pulp. A comparison of spruce cooks and hemlock cooks showed the bleach requirement of hemlock pulp to be 25% more than spruce.

Summarizing the effects of reducing the chlorine usage for sulphite pulp the following points are brought out:

1. With a chlorine usage of less than 80% of the theoretical requirement, any reduction should be made in the chlorination stage if the optimum brightness is to be obtained.

2. With a chlorine usage of 70% of the theoretical requirement, pulps can be bleached to about an 80 brightness; with 60% of the theoretical chlorine, a brightness of greater than 70 can be obtained and with 50% of the theoretical chlorine requirement, the brightness will be only slightly above that of the unbleached pulp.

3. Pulps bleached with a total of less than 50% of the theoretical chlorine requirement will have a color lower than the unbleached pulp. Such pulps should

TABLE II.

| Normal Chlorine, % | Pulp | Tons per day | Chlorine per ton pulp, lb. | Brightness before Bleaching | Brightness after Bleaching | Chlorine per ton pulp for 1 point Brightness Increase, lb. |
|---|---|---|---|---|---|---|
| 100 | Soda | 99 | 128 | 36 | 73 | 3.5 |
| 100 | Sulphite | 69 | 102 | 62 | 79 | 6.0 |
| 100 | Old Paper and Ledger | 74 | 21.7 | 56 | 70 | 1.5 |
| 70 | Soda | 99 | 90 | 36 | 68 | 2.8 |
| 70 | Sulphite | 69 | 72 | 62 | 70 | 9.0 |
| 70 | Old Paper and Ledger | 74 | 15.2 | 56 | 66 | 1.5 |

be made only if the color is less a consideration than factors such as unbleached odor. If such pulps are made, the best brightness will be obtained either with single-stage hypochlorite bleaching or two-stage bleaching using less than 20% of the total chlorine in the chlorination stage.

4. Brightness values greater than that of the unbleached pulp can be obtained by using mixtures of fully bleached and unbleached pulps. Such a practice allows a brightness greater than that of the unbleached pulp to be obtained with an over-all chlorine usage of less than 50% of the theoretical chlorine requirement.

5. The cleanliness of pulps bleached with 80% of the theoretical chlorine was good; between 50 and 70% it was poor to fair; and below 50% it was no better than that of the unbleached pulp.

6. The cleanliness of the mixtures of unbleached and bleached pulps was poor in all cases. For a comparable brightness, mixtures were much higher in dirt content than were pulps wherein the entire stock was bleached.

In a mill using as main fiber constituents for their book paper, the following materials: soda pulp, sulphite, and deinked old papers and ledger, an investigation of the most efficient method of using their chlorine is indicated in Table II.

These data indicate that the most efficient way to use the chlorine is to use as little as possible on the sulphite and the remainder on old paper and soda pulps. According to this, on account of the small quantity of chlorine required, the old papers should

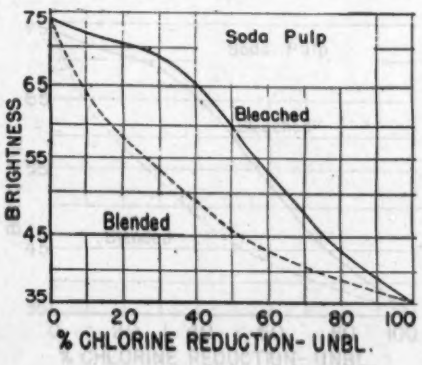


FIG. 2

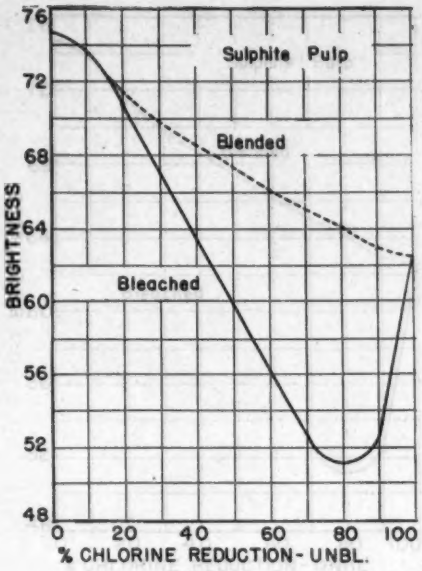


FIG. 3

be kept up to a 68 to 70 brightness and as little as possible sulphite should be bleached, but where this sulphite is bleached it should be bleached to a 78 or 80 brightness. If this brightness is not required the bleached pulp should be mixed with the unbleached to get the lowest permissible brightness. The remainder of the chlorine should be used for bleaching the soda pulp.

Under the conditions which exist today, a large number of mills in using duller pulps have learned a great deal about the advantages to be gained from the blending of pulps in producing given colored shades. For example: many brown shades and gray shades have been made in the past on essentially one furnish, such as semibleached kraft. Today these same shades are being made with a mixture of semibleached and unbleached kraft where the dull component necessary to produce a gray or brown shade comes from the duller pulp rather than from the use of a dull or black dyestuff.

Theoretically it is known that the Kubelka-Munk relationship between light reflectance, light scattering, and light absorption holds very closely for blending of pulps. This relationship is:

$$K/S = (1 - R_\infty)^2 \div 2R_\infty.$$

Thus may be taken the $R_\infty$ (reflectance of a multiple pile) brightness value for the two pulps and compute their K/S values. These values are then proportioned according to the proposed blending of the two pulps and the reflectance value of the mixture determined from the formula with the aid of a set of tables showing K/S values for all values of R from 0 to 100—e.g., the blend of equal parts of an 80 brightness pulp and a 60 brightness pulp does

TABLE III.

| Bleached Stock, % | Unbleached Stock, % | G. E. Brightness: Hemlock Pulp | G. E. Brightness: Spruce Pulp | Cleanliness | Chlorine Used Based on Total Stock % of Theoretical: Hemlock Pulp | Chlorine Used Based on Total Stock % of Theoretical: Spruce Pulp | Brightness Obtained by Bleaching Entire Stock with Chlorine: Hemlock Pulp | Brightness Obtained by Bleaching Entire Stock with Chlorine: Spruce Pulp |
|---|---|---|---|---|---|---|---|---|
| 0 | 100 | 46.8 | 59.5 | very poor | 0 | 0 | 46.8 | 59.5 |
| 20 | 80 | 47.7 | 63.3 | very poor | 18 | 14 | 41.0 | 55.0 |
| 40 | 60 | 52.2 | 66.8 | very poor | 36 | 28 | 45.0 | 55.0 |
| 60 | 40 | 58.4 | 70.5 | very poor | 54 | 42 | 58.0 | 63.0 |
| 80 | 20 | 66.2 | 73.9 | poor | 72 | 56 | 73.0 | 73.0 |
| 100 | 0 | 80.9 | 80.0 | fair | 90 | 70 | 80.9 | 80.0 |

not give a 70 brightness but gives 68.2 brightness. These differences from the arithmetical means increase as the brightness value decreases, with the result, that at the lower ranges, there is considerable variation. As an illustration it has been computed that a 40 brightness pulp (light unbleached kraft) could be obtained by mixing 35.25% of a 30 brightness unbleached kraft with 64.75% of a 50 brightness low semibleached kraft. Similarly a 40 brightness pulp would also result from a mixture of 46.3% of a 30 brightness kraft with 53.7% of a 60 brightness kraft or, again, by the mixture of 51.3% of a 30 brightness and 48.7% of a 70 brightness kraft.

From a practical standpoint the results obtained by blending various amounts of fully bleached sulphite pulp with unbleached sulphite pulp are given in Table III. For comparison, figures are given to show the brightness obtainable when the entire stock has been bleached with the same amount of chlorine which was used for the bleached portion of the mixture.

It will be seen that mixtures of bleached and unbleached hemlock were not altogether satisfactory as to brightness. Higher brightness figures were obtained when the entire stock was bleached with amounts of chlorine greater than 40% of the theoretical requirement.

Figures 2 and 3 show the effects of bleaching pulps with a given amount of chlorine in comparison with pulp mixtures of unbleached and fully bleached pulps having the same amount of chlorine usage. From these curves it is obvious that nothing can be gained by bleaching only part of the soda pulp and blending with unbleached pulp. In the case of the sulphite pulp the conditions are entirely different, as the chlorine is reduced, the brightness goes down to a point where, at 80% reduction, the brightness is fully 10 points below the unbleached sample. For example, if a 50% chlorine reduction is required, a better product can be obtained by using this chlorine to bleach one half of the pulp and blend it with the other half of unbleached pulp.

**Acknowledgment**

In presenting this information the Committee wishes to thank all those companies and individuals who have so generously cooperated in making this information available. It is obvious that these conditions imposed on the industry entail sacrifices of quality and a lowering of standards which will last only so long as the present emergency exists. In order that the industry can do its part in the War Production Program, the Committee hopes that others who have successfully solved the problem of chlorine reduction will offer their information for the benefit of the industry as a whole.

## Delaware Valley Discusses Lighting

The regular meeting of the Delaware Valley Section of the Technical Association of the Pulp and Paper Industry was held February 6, 1942, at the Engineers Club in Philadelphia, Pa. E. J. Albert presided as Chairman.

Arthur A. Brainerd, Director of Lighting Service of the Philadelphia Electric Company, gave a talk on lighting in general, and its application in paper mills. Mr. R. J. Koons, also of the Philadelphia Electric Company, illustrated Mr. Brainerd's talk with sketches. It was mentioned that frequently lighting systems are operated at points far below their maximum efficiency due to dust or dirt accumulations. Dust tight installations were recommended to help maintain better lighting. High pressure mercury vapor lamps were said to be the most efficient on the market. They are not good for any color matching, although they are better than the usual low pressure lamps. Where color is of importance a combination of high pressure mercury vapor and incandescent lamps give good results in many cases. The use of daylight fluorescent lights are good for color matching, although the warm white lights are more efficient and are to be preferred if color is not of too much importance. The stroboscopic effect frequently obtained with fluorescent lights is inherent in this type, but it can be reduced by using two tubes and an activator to keep the tubes on alternate cycles. The blue-white lights show more stroboscopic effect than the warm whites due to the fluorescent powder being less phosphorescent.

Wherever color matching is done it was recommended that the same light always be used in order to eliminate variations that will occur if matching is done under artificial light part of the time and daylight the other part.

Following the talk a sound film "Three Dimensional Seeing" was presented. This film was based on research carried out by the Philadelphia Electric and E. I. du Pont and was concerned with the proper painting of equipment for safe and efficient operation. It was found that painting the main body of a machine a medium gray and the working area a light buff so as to provide a contrast, accidents were reduced, production increased, employee relations improved, and fatigue reduced. The proper painting of ceilings and walls was also covered. Further work is being carried out to determine the optimum conditions.

Those present included: Edw. J. Albert, Roger W. Beales, Richard T. Bingham, Moe Bixler, Earl Bosch, F. O. Boylon, A. A. Brainerd, F. W. Brainerd, W. E. Brow, C. M. Connor, J. E. Conway, O. C. Cordes, J. D. Davis, George H. Detwiler, D. S. Dieffendorfer, J. C. Dieffendorfer, Paul Easton, Jacob Edge, Robt. M. Gavin, Emerson N. Glauner, J. F. Good, Lois V. Hans, A. M. Hartley, C. W. Hoffman, Harry Hulmes, Richard J. Koons, Louise E. McGrath, James McVey, Wm. D. Marshall, M. Craig Maxwell, Lewis B. Miller, A. H. Nadelmann, D. S. Raub, Charles W. Rivise, Sam Reynolds, John Roslund, Harry Speel, Howard H. Street, George M. Suydam, Richard N. Temple, R. Tutt, Jr., J. M. Tuttle, J. W. Voller, Archie E. Waugh, A. H. Webber, H. L. Winslow, Edmund A. Yerger.

## Water-Proof Packaging

The Reynolds Metals Company has announced a new water-proof, vapor-proof material for defense packaging, which is being widely acclaimed as a flexible can, relieving demands on critical materials. This new product is being marketed as Type B "Victory Stock."

Extensive tests in laboratory and out in the field have just been completed, and J. Louis Reynolds, vice president in charge of sales, has announced that additional customers now can be accommodated.

Type B is announced as a sturdy moistureproof material, especially valuable as a covering for fibre cans, or as liners, bags, box coverings, as well as for titewraps and cartons.

The company is accepting business only from firms with definite priority ratings.

# Lighting for Improved Plant Efficiency and Safety*

By A. K. Gaetjens[1]


## Abstract

*Good industrial illumination, through aiding each employee to see more quickly, accurately, and comfortably, increases the efficiency and safety of plant operation. Several case examples are cited where improved illumination definitely improved plant operation.*

*Footcandle recommendations for the various areas in the paper mill are discussed.*

*Recently developed light sources, such as the fluorescent and mercury lamps, have made abundant light available at a much lower cost than formerly.*

*Modern lighting requires a scientific analysis of the visual problem to provide optimum seeing conditions as contrasted to merely providing a given quantity of light.*

*Proper maintenance of the lighting equipment is essential for permanently satisfactory seeing conditions.*


The most important single element in nearly every industrial establishment is skilled manpower. Despite the development of labor-saving devices and complex machinery which have reduced the amount of labor (particularly unskilled labor) necessary for manufacturing processes, men are essential to guide, check, and oversee manufacturing processes. In general the more complex the machinery, the more highly skilled are the workmen necessary for its efficient operation. Today a man's thinking ability is more important than his manual efforts. Under these conditions workmen have become increasingly dependent upon eyesight. Psychologists have estimated that seven out of every eight mental impressions are received through the visual sense. Thus, if an individual is to function as a fast-thinking workman who reacts quickly and accurately to every change in his physical environment, it is essential that his visual sense be at maximum efficiency.

The sense of sight is completely dependent upon one factor—light, over which the workman has no control. Without light the sense of sight is completely inoperative. With only small quantities of light it is only partially effective. Under good lighting conditions the sense of sight operates as nature intended, and the individual can see quickly, accurately, and comfortably, obtaining a complete report of his surroundings or the objects of regard with a minimum of fatigue or strain. Tests have shown that one sees more quickly under good lighting conditions. An increase in illumination from one footcandle[2] to a moderate level of approximately 20 footcandles results in increasing the speed of seeing approximately three times.

Under good illumination it is possible to see an object of much smaller size than is discernible under poor illumination. For example, one can see an object at 100 footcandles that is approximately one half the size of the smallest object discernible under one footcandle. Thus, slight defects can be seen and corrected at the time of occurrence which might otherwise be caught only upon final inspection.

Of particular interest is the fact that good illumination helps those with defective vision more than those with normal eyesight. One of industry's principal problems is the retention of the services of older employees who are well fitted physically and mentally for the responsible work for which their years of experience have prepared them. In many cases, however, failing vision will prevent such employees from carrying on exacting work, and thus relegate them to simple, routine tasks in which their past experience is of little value. However, a carefully controlled production test indicated that for an equal increase in footcandles a group with defective vision improved their working time 40% more than did another group with normal vision. In other words, better lighting aids the visually handicapped, who are most frequently the older employees, more than it does those with normal vision.

In addition to the more cheerful appearance of a well-lighted interior, there are many minor frustrations due to poor lighting which continually harrass the workmen—such matters as difficulty in selecting the proper tools, reading scales, blueprints, meters, etc., which if continued day after day often instill a spirit of defeatism, an undesirable condition among a factory personnel.

Many examples could be cited where production was materially increased by a change in lighting only. The most recent of these which has come to the attention of the author occurred in a core room at the Benton Harbor Malleable Industries at Benton Harbor, Michigan. Here lighting was increased from 1 to 5 footcandles to approximately 40 footcandles. It was necessary to produce a certain number of cores per day. However, following the relighting this production was turned out in 82% of the time required before relighting. Thus 18% of the man-hours formerly used in coremaking became available for other work. The daily saving was equal to one fourth of the cost of the new lighting, so that it is paying for itself every four days.

In many cases where plants have been operating under marginal seeing conditions the quality of the product was greatly improved following the new lighting. In one instance of rubber molding the day and night shifts were employing the same number of men. However, the night shift production was approximately 10% less than the day shift, and the greater amount of scrap occurred at night. Following relighting the night shift production became equal to the day shift production, and the amount of scrap

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[1] General Electric Company, Nela Park, Cleveland, Ohio.

[2] A footcandle is the unit of illumination and is a measure of density of light falling on any surface. It is equal to one lumen per square foot and is the density of light falling upon a surface one foot away from a standard candle.

also became approximately equal. The over-all spoilage was decreased 30%.

### Lighting and Plant Safety

"A careful workman is the best safety device." This phrase is heard constantly, but frequently one important link in making him a good safety device is entirely neglected. A careful workman can guard his safety well only if he knows quickly and accurately what is going on about him. Thus again the sense of sight and its partner, good lighting, are essential to a complete safety program.

The close correlation between the accident rate and illumination is not generally understood. In most cases where accidents are attributed to poor illumination they occur because there is practically no illumination at all. Poor or indifferent lighting as a contributing cause of accidents (even though it may provide measurable quantities of light) has been overlooked. Many factors or poor illumination, such as glare, (both direct from the lighting units and reflected from the work) or dark shadows, hamper seeing and will cause after images and excessive visual fatigue, which are important contributing causes of industrial accidents. Many accidents which are attributed to individual carelessness can actually be traced to difficulty of seeing.

Perhaps the greatest losses to industry are not the lost-time accidents but the minor accidents where the employees may or may not report for first aid, but continue their work. The quantity and quality of the work suffer and are uncompensated for by insurance.

A large punch-press department of a motor car manufacturer was relighted. The illumination was increased from approximately 5 footcandles to 25 footcandles. A check was made of accident rates for a three-month period preceding the relighting and three months following the relighting. The man-hours exposure during the six-month period was approximately 8,400,000. Over this entire period there were no lost-time accidents of any sort. However, there were a total of 1424 minor, or nondisabling, injuries during the six-month period. The significant fact is that the rate of accidents was reduced 11% following the relighting, and there were no other variables in the department which could account for this sudden decrease in the minor accident rate.

A uniform level of general lighting makes possible the most efficient arrangement of machinery, work tables, and conveyors, regardless of the natural lighting facilities. The outmoded necessity for placing all difficult seeing tasks close to windows has been responsible for much wasted motion and for crowded work rooms with the inefficiency that crowding causes. Good artificial lighting can be brought to the work point to achieve maximum utilization and efficiency of the available floor space. Plant cleanliness also is facilitated in a well-lighted area. In plants where poor illumination makes it difficult to see into corners or under machinery, these dark areas inevitably collect dirt and waste which otherwise would be cleaned out.

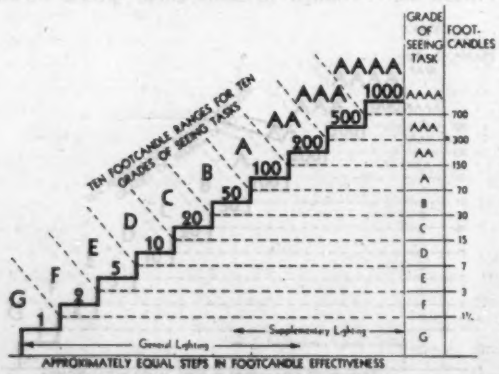


FIG. 1

### Quantity of Light

How much light is desirable for optimum seeing conditions *(1)*? Mankind evolved biologically under outdoor lighting conditions where the illumination varies tremendously. Thus it is possible to "see" to some extent under the meagre 1/100th of a footcandle or less from starlight. However, most of man's seeing in nature was done under outdoor daylight, which frequently is as great as 8000 to 10,000 footcandles. Extensive research has indicated that seeing can be accomplished more easily, quickly, accurately, and comfortably as illumination is increased to levels well above 100 footcandles. Present-day recommendations, therefore, are admittedly a compromise between what is most desirable and practical considerations such as cost and the present limitations of illuminating engineering. However, by adding to the general lighting, supplementary units relatively close to the point of work engineers can achieve illuminations that approach desirable optimums.

It is commonplace knowledge that some objects are harder to see than others, therefore, more light should be provided for the more difficult seeing tasks. There has recently become available an instrument which for the first time evaluates the relative ease of seeing objects which vary in size, shape, detail, etc. The Luckiesh-Moss visibility meter *(2)* integrates the complex factors concerned in visibility so the relative difficulty of seeing them can be accurately measured. This in turn can be expressed in the number of footcandles necessary to illuminate a given object to provide *any desired* standard of ease of seeing. In addition to indicating the footcandles necessary, it aids the lighting specialist to determine the quantitative value of the various factors which determine the quality of lighting. With this instrument it is thus possible to determine such factors as the direction of the light and the degree of diffusion for maximum visibility of a given object.

Light, in common with many other psychological factors, does not affect seeing in an arithmetic progression. In order to obtain equal and significant improvements in seeing, it is necessary to increase light in logarithmic proportion. Thus for increasingly difficult visual tasks footcandle recommendations are divided into ranges which increase in approximately logarithmic proportions, as shown in Fig. 1 *(3)*. The comparative difficulty of the seeing tasks included in each grade are indicated below.

*Grade A—100 Footcandles.* For very exacting and prolonged seeing tasks such as fine bench and machine work, extra fine hand painting and finishing, and for the discrimination of fine detail of low contrast in pressing dark cloth products and weaving dark woolens. (Under varying circumstances the footcandles may range from 30% below to 40% above the value given.)

*Grade B—50 Footcandles.* For severe and prolonged seeing tasks such as medium bench and machine work, medium fine assembly and inspection, fine sanding and finishing woodwork, drafting, and proofreading. (Range—minus 30% to plus 40%.)

*Grade C—20 Footcandles.* For moderately critical and prolonged seeing tasks such as rough bench and machine work, medium assembly and inspection, hand painting and finishing, for pressing light cloth products and weaving light woolens. (Range—minus 30% to plus 40%.)

*Grade D—10 Footcandles.* For visually controlled work in which seeing is important but more or less interrupted or casual, and does not involve discrimination of fine details or low contrasts—for rough manufacturing processes such as molding clay products and cements, glass blowing machines, billet, blooming and sheet bar mills in steel manufacturing. For stock rooms and active storage areas.

*Grade E—5 Footcandles.* For interiors where crude manual tasks are intermittently carried on, such as required for grinding clay products and cements, stone crushing, hand furnaces and boiling tanks in chemical plants, stock rooms and active storage areas for medium sized materials; for the safe assembly or movement of people in auditoriums, through corridors and stairways. For active work areas out of doors —loading docks.

*Grade F—2 Footcandles.* To dispel darkness in large outdoor areas, such as, for automobile parking, lumber and other storage yards, and for industrial protective lighting.

*Grade G—1 Footcandle.* To dispel darkness in large outdoor areas such as automobile parking, lumber and other storage yards, and for industrial protective lighting.

*Grade AA—200 Footcandles.* For extra fine inspection such as required in making jewelry and precision instruments. (Range—minus 30% to plus 40%.)

*Grade AAA—500 Footcandles.* For color identification in industry. (Range—minus 30% to plus 40%.)

*Grade AAAA—1000 Footcandles.* Outdoor levels of illumination. For photography and hospital operating rooms. (Range—minus 30% to plus 40%.)

TABLE I.—RECOMMENDED ILLUMINATION FOR VARIOUS TASKS

| | Footcandles Modern Practice | Grade of Illumination |
|---|---|---|
| Acid Towers | 10 | D |
| Beaters | 10 | D |
| Blacksmith Shop | 10 | D |
| Bleachers | 20 | C |
| Carpenter Shop | 20 | C |
| Chip Storage | 5 | E |
| Deckers | 10 | D |
| Digester House | 10 | D |
| Finishing Room—General | | |
| Paper Cutters, Layboys, and Trimmers | 20 | C |
| Hand Counting | 30 | C+ |
| Inspection | 50 | B |
| Knotters | 10 | D |
| Laboratory | 50 | B |
| Lappers, Thune Press | 20 | C |
| Machine Shop and Maintenance Department, Repair Shops:— | | |
| Rough Bench and Machine Work | 20 | C |
| Medium Bench and Machine Work | 30 | C+ |
| Fine Work—Buffing, Polishing, etc. | 100 | A |
| Extra Fine Work | 200 | AA |
| Offices:— | | |
| Bookkeeping, typing and accounting | 50 | B |
| Business Machines, local illumination | 100 | A |
| Conference Room, general meetings | 30 | C+ |
| Office Activities—(*see* desk work) | | |
| Corridors and Stairways | 5 | E |
| Desk Work: | | |
| Intermittent reading and writing | 30 | C+ |
| Prolonged close work, computing, studying, designing, reading blueprints and plans | 50 | B |
| Drafting: | | |
| Prolonged close work—art, drafting, and designing in detail | 50 | B |
| Filing and Index References | 30 | C+ |
| Lobby | 20 | C |
| Mail Sorting | 30 | C+ |
| Reception Rooms | 20 | C |
| Stenographic Work: | | |
| Prolonged reading shorthand notes | 50 | B |
| Packing | 20 | C |
| Paper Machine: | | |
| Wet End | 30 | C+ |
| Drying Cylinders | 10 | D |
| Calendering | 10 | D |
| Reel | 50 | B |
| Power Plants, Engine Room, Boilers: | | |
| Boilers, Coal and Ash Handling, Storage Battery Rooms | 5 | E |
| Auxiliary Equipment, Oil Switches, Transformers, Engines, Generators, Blowers, Compressors | 20 | C |
| Control Room— | | |
| Switchboards and Meters | 30 | C+ |
| Rewinder | 100 | A |
| Settling Tank House—Interior of Tank | 10 | D |
| Shipping Platform | 5 | E |
| Soda Room | 10 | D |
| Sulphur Room | 10 | D |
| Wood Room: | | |
| Chipping | 20 | C |
| Pulp Grinding | 10 | D |
| Yard Lighting: | | |
| Loading | 2 | F |
| Protective | 1 | G |
| Parking Lot | 1 | G |

Applying these general recommendations to the specific seeing problems in the pulp, paper, and paperboard industry, one arrives at the recommendations given in Table I.

Many locations require light primarily for safety and convenience. The visual tasks encountered are intermittent and not severe. The following areas and types of operation fall in this classification: digesters, pulp grinding rooms, sulphur rooms, acid towers, settling tanks, knotters, riffler beds, screening, deckers, beaters, and the greater part of the area housing the paper machines.

It is suggested that the interior of the settling tanks be illuminated somewhat better than is customary. As a power-conservation measure, this equipment could be controlled by switches in the doors of the tanks so that when the doors are shut there will be no waste of energy.

In the wood room it is suggested that in the areas where knots are being removed either by machine or by hand axe, approximately 20 footcandles be supplied. This is a relatively dangerous task and one in which carelessness is difficult to overcome. Here again good lighting will aid the individual workman to instinctively avoid a dangerous situation.

Around the bleachers it is recommended that light of a daylight quality be installed to aid in checking the degree of bleach during the process.

At the wet end of the paper machine seeing tasks are of sufficient frequency and severity to require approximately 30 footcandles of illumination. This is often applied from one side of the machine so that the workman standing on the opposite side sees images of the light source from the stock on the Fourdrinier screen. Where this lighting method is used, an indirect system is of greatest benefit. In other words, a wall or screen is utilized, and the light first directed upon that surface from which it is reflected to the machine. A soft and comfortable quality of lighting is obtained in this way. This type of lighting also can be used to good effect throughout the portion of the machine where drying cylinders are located. Here seeing tasks are more casual and lower illuminations can be used successfully.

At the reeling end of the machine a dual lighting system is proposed. At the time a new reel is started the action requires highly-skilled, carefully coordinated movements on the part of the workmen. This will be facilitated by good illumination at the time the reel is started. It is recommended that approximately

50 footcandles be provided by supplementary lighting units placed above the reel. However, while the paper is being reeled, a check is often desired for uniformity of thickness, streaking, and other similar defects which may develop. Such defects are seen most easily by transmitted light. This can be provided by a bank of lamps placed under the paper which transmits a certain portion of the light and instantly shows up many of the defects mentioned above. In order to see these defects, very little light should be thrown on the top surface of the paper so that the supplementary lighting used when starting the reels should be off while the paper is being inspected. Similarly, the lighting units under the paper should be turned off when the reel is being started as these constitute a severe glare source due to their position below the eye level of the workmen. The two groups of lighting units could be controlled from a single double-throw, double-pole switch.

The rewinder is a relatively hazardous location, and it is recommended that good illumination be provided at this point to minimize the possibility of accidents.

Similarly, cutting, trimming, and packing are semi-skilled or skilled operations which require continuous and moderately severe visual effort. For these operations approximately 20 footcandles is recommended.

Hand counting seems practically automatic, and yet it again calls for extreme coordination between the eyes and the hand. Anyone who has watched a new operator at this test will realize the high degree of skill required. Here approximately 30 footcandles is recommended.

Where inspection is combined with hand counting, even higher illumination is recommended; where it is a separate operation the higher illumination also is necessary. Here not only should the illumination be relatively great, but it will be found that a higher visibility of defects is obtained by the use of directional light sources. Here three quarters or more of the light should be coming from one side of the operator. This minimizes the sheen which is present even in relatively matte papers and permits fuzzing and other surface blemishes to be readily seen (Fig. 3).

All outdoor areas used in any way at night should be provided with a relatively low illumination for safety and protective purposes. Today light is being used with extreme effectiveness to guard against sabotage. In addition, areas where loading or shipping may be conducted at night should be provided with artificial light. It has also been found desirable to floodlight parking lots to minimize danger from intruders or theft.

Offices and laboratories are rightly considered of extreme importance as nerve centers for the entire plant operation. Here quality factors such as a minimization of direct and reflected glare, harsh shadows, and a lack of uniformity in illumination must be carefully avoided.

## Quality of Lighting

The quality of lighting is concerned with the distribution of brightness in the field of vision. The various factors considered below affect tremendously the overall "seeing efficiency" of the lighting system which should be the ultimate criterion rather than the simple evaluation of footcandles which are secured from a given watts per square foot.

It is usually desirable to have relatively uniform general illumination throughout any particular work area since eye strain generally results where lighting is very uneven, with extreme contrast between bright and dim areas. Seeing is difficult because the workman's eyes are unconsciously and continually trying to adapt themselves to the many different brightnesses in the field of vision. Two factors are of primary importance: (a) direct lighting units of the diffusing type should be spaced no further apart than their height above the floor; and (b) where supplementary lighting is required, general lighting should also be used to avoid excessive brightness variation in the field of vision.

Harsh, dark shadows should be eliminated. They constitute an accident hazard because they may obscure objects that should be seen. Shadows slow up production and are likely to cause errors in operation. Shadowy interiors hide dust and dirt, thereby affecting plant maintenance. Shadows can be avoided by a consideration of the same factors that eliminate poor distribution.

*Direct glare* from a light source is common and definitely reduces visibility and increases eye strain. It may be caused by lighting equipment which does not confine the light principally to angles well above or well below the horizontal, but which directs an excessive amount to the eye. In other cases glare is caused by lighting units which are equipped with larger lamps than those for which they were designed. Tests have indicated that a glaring light source which produces only 5 footcandles of illumination at the eye may reduce the effective lighting as much as 40% even though it may be 40 degrees above the line of vision. Glare causes nervous tension and fatigue, just as do levels of illumination, with a resultant waste of useful nervous energy.

*Reflected glare* is often more objectionable than direct glare and quite frequently is more harmful because it is generally found below the horizontal, a zone in which the eye has no natural protection. Reflected glare is usually caused by lighting equipment that does not diffuse the light sufficiently to reduce its brightness when the reflected image is seen in the task, or by the improper location, particularly of supplementary lighting units which permit bright reflections of the source to reach the eye.

## Light Sources

Lamps *(4)* employing three radically different methods of producing light are commonly used in the industrial field. In the order of their development these are: the tungsten filament lamp, the mercury lamp, and the fluorescent lamp.

The tungsten filament lamp is simply a wire heated to incandescence by the passage of an electric current. In the sizes (200-1500 watts) commonly used for general lighting, efficiencies range from 17 to 21 lumens per watt. These lamps are the simplest of the group to operate since it is only necessary to connect the proper rated voltage across the lamps for efficient operation. However, the efficiency of the lamp is affected to an extreme degree by the voltage impressed. A reduction of 1% in voltage will reduce the light output approximately 3.5%. For this reason it is essential that the proper rated voltage be delivered to the lamp.

The mercury lamp is an electric discharge lamp operating a mercury-vapor arc. The arc temperature,

pressure, voltage, and current are selected to produce the maximum light output in the visible spectrum.

Because electric arcs have an inherent negative resistance characteristic, suitable current ballasts as well as starting equipment must be employed with electric discharge lamps. Transformers designed for type H lamps will furnish proper lamp voltage, and the inductance of the winding will supply adequate current ballasting. This current-limiting equipment (generally referred to as the auxiliary) is a necessary part in the operation of every lamp and introduces some wattage loss and lower power factor than that due to the lamp alone. Power factor correction by static capacitors is effective, and may be applied separately on the circuit or may be incorporated in the auxiliary itself. Ballasts are designed to operate single lamps or, in the case of the 400-watt mercury lamp, a pair of lamps. The circuits for the "Tu-lamp" ballasts are such that the two lamps operate out of phase, thus reducing the cyclic variation in light output of "flicker" that is noticeable with all electric discharge lamps.

The 400-watt type H-1 mercury lamp is the most common lamp in general service. It operates at an efficiency of 40 lumens per watt or approximately 35 lumens per watt if the ballast loss is considered. This lamp requires approximately seven minutes to reach a stable operating condition with full light output. This is due to the fact that maximum light output is not obtained until the arc temperature and pressure have reached a maximum. If the current is interrupted while the lamp is in operation, the lamp cannot be relighted until it has cooled enough to reduce the mercury-vapor pressure to allow the arc to strike again, which will occur automatically if the current is on. This usually requires about seven minutes. From this point on the arc regains its full light output in about five additional minutes. This characteristic of the lamp is a disadvantage for intermittent services where the lamps are often switched on and off or where there are likely to be power interruptions or dips of greater than 10% in voltage. However, where lamps are used continuously for extended periods and voltage is relatively constant, no inconvenience will be experienced.

A new mercury lamp which has just been announced is the 3000-watt type H-9. This lamp is approximately 54⅞ inches in overall length and operates at an efficiency of about 40 lumens per watt. It is similar in operating characteristics to the 400-watt lamp, and the same care must be taken to provide a steady voltage supply and use the lamp where it will be on for extensive periods. This lamp has such a great light output that it will probably be applied primarily to areas with high ceilings where the lamps can be spaced out and still obtain uniform illumination. It should also be placed high enough to minimize objectionable glare due to the high brightness of the lamp itself. In paper mills it is possible that this illuminant could be used in the high-bay areas which house the paper machines.

The fluorescent lamp *(5-7)* is also an electric discharge lamp that operates on an entirely different principle from the mercury lamp. It consists of a mercury-vapor arc designed to produce a maximum of energy at one wave length in the ultraviolet portion of the spectrum. The inside of the tube which houses the arc is coated with fluorescing powders which absorb the ultraviolet radiation and reradiate it as visible light. The color of light which is reradiated depends upon the powders selected. Thus the same basic lamps can be made with a number of different colors of light output. Commercially available colors are red, gold, pink, green, blue, soft-white, white, daylight, industrial-white, and blue-white. Of these, the colors most commonly used in industry are the last four. Available wattages are 6, 8, 14, 15, 20, 30, 40, 65, 85, and 100-watt. Of these the 40, 85, and 100-watt are the most commonly used. The 40-watt has maximum efficiency for general lighting, while the 100-watt is the largest size that has been practically made. All of these lamps are alternating current lamps—i.e., they are designed primarily to operate on alternating current at 60 cycles. Equipment has been designed to operate the lamps on direct current and on 25 and 50 cycles. However, operation is not as satisfactory on direct current and 25 cycles, and we do not recommend its use where it is possible to obtain 50- or 60-cycle power.

In the lamps themselves the current is alternating in all but the 85-watt lamp. This lamp is a development of the Cooper-Hewitt mercury-vapor lamp and employs a rectified circuit. In other words, the arc is a pulsating, direct current although the equipment operates from alternating current. It is available for industrial service only and has two colors: bluish-white and industrial-white. Both of these are psychologically "cool" colors that are quite acceptable for lighting industrial areas.

Due to the large size of these lamps (the 40-watt lamp is 4 feet long, and the 85- and 100-watt lamps are approximately 5 feet long) these lamps are best used either for general lighting where a general distribution of light is desired or for supplementary lighting where the lamps can be relatively close to the point of work and directional effects are not so necessary.

Lamp efficiencies vary considerably with the different sizes of lamps and different colors. However, the 40-watt white lamp which is the most efficient one commonly used, is rated at 53 lumens per watt, or an overall efficiency of 43 lumens per watt when the ballast also is considered. Fluorescent lamps, like the mercury lamps and all other electric discharge lamps, require ballasting equipment to limit the current and provide the proper voltage for starting and lamp operation.

Also, the Mazda F or alternating current type lamp requires a starter, which is a small switch that permits a current to preheat the cathodes at each end of the lamp, thus making possible much lower starting voltages.

The fluorescent lamps commonly used for general lighting are rated to 2500 hours average life. This is with normal operation of lamps operating three or four hours from each start. The number of starts affects lamp life materially, and an excessive number will cut down on the average life. For this reason it is recommended that fluorescent lamps be used primarily in services where the lamps are on for relatively long periods. Where these lamps are being considered for general lighting, a thorough study should be made of their operating characteristics, which are quite different from the comparatively well-known characteristics of filament lamps.

### Relative Cost of Light from Various Illuminants

Because of the wide differences in first cost and operating cost between these various light sources,

there is considerable misunderstanding as to their comparative cost. In general, filament lamps have a lower first cost because of the simplicity of the installation and higher operating cost because of their lower efficiency. Mercury and fluorescent lamps have a higher first cost, and usually a lower operating cost because of their higher efficiency. Which is the most economical depends to a large extent upon current cost (the main item in operating cost), and also the number of hours service per year. Thus where a lighting installation is to be used a great number of hours per year, a low operating cost is a desirable feature. Conversely, where equipment is used only intermittently and may average only a few hundred or a thousand hours a year, operating cost is a lesser factor and first cost is a primary consideration. Figure 2 is based upon a 20% per year amortization rate and 2000 hours per year operation.

Of greater importance than a simple cost comparison are the considerations of the quality of lighting and quantity of light that are obtainable from various systems. Where these factors are equal, the decision can be based upon cost alone; otherwise the difference in cost should be weighed against the quality factors involved.

### Lighting Equipment

The selection of the proper type of reflecting and diffusing equipment is more important today than ever before. In the early days of electric lighting a reflector was largely a device for improving efficiency, because of the necessity of conserving light from the small, low-wattage lamps which were available. Today's light sources have outgrown the old-type refectors, and we are in an era of lighting advancement calling not only for intelligent selection of equipment for efficiency but also for diffusion, direction, and control suited to the task.

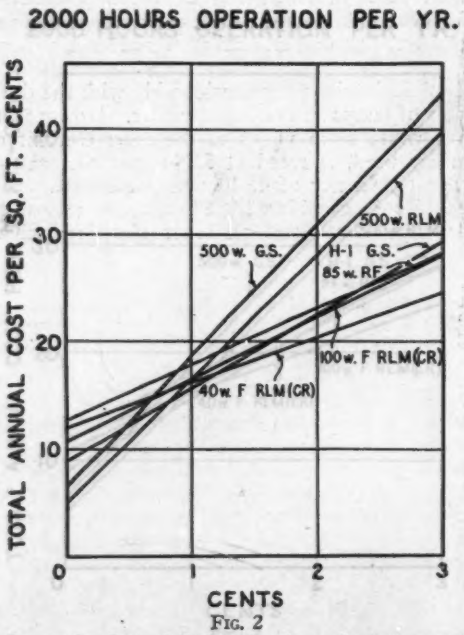


FIG. 2

**The Comparative Costs of Various Illuminants for Different Current Costs at 2000 Hours Per Year Operation and an Amortization Rate of 20%.**

Key: 500-w. G.S. (500-Watt Filament Lamp in Glassteel Diffuser)
500-w. RLM (500-Watt Filament Lamp in Open RLM Reflector)
H-1 G.S. (400-Watt Mercury Lamp in Glassteel Diffuser)
85-w. RF (2—85-Watt RF (Rectified Fluorescent) Lamps in Open Porcelain-Enameled Reflector)
100-w. F RLM (CR) (2—100-Watt Mazda F (Fluorescent) Lamps Open RLM Porcelain Enameled Reflectors Arranged in Continuous Rows)
40-w. F RLM (CR) (2—40-Watt Mazda F (Fluorescent) Lamps in Open RLM Porcelain Enameled Reflectors Arranged in Continuous Rows)

FIG. 3a

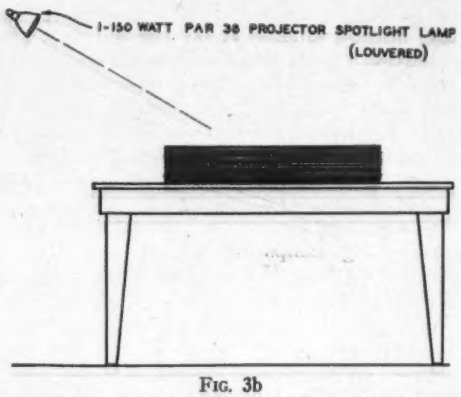


FIG. 3b

**Two Suggestions for the Production of Directional Lighting Useful in the Inspection of Finished Paper Stock.**

There are several fundamentals of performance usually considered by the engineer in the choice of types of units: (a) desirable distribution of light and suitability for the particular interior involved; (b) efficiency of light output; (c) inherent maintenance of initial efficiency and ease of periodic cleaning and lamp replacement; (d) adaptability to greater output through the use of larger lamps, or more lamps should higher illumination be required in the future; (e) sturdiness of construction; and (f) cost.

The RLM (reflector and lamp manufacturers) Institute has drawn up specifications for many industrial reflectors that are widely accepted. These call for certain rigid specifications defining the gage of metal used, number of coats of enamel in the case of porcelain-enameled steel, reflection factors of the reflecting surface, size, shape, cutoff, and similar important qualifications. For fluorescent equipment, the ballasts and lampholders similarly must meet rigid specifications.

The Fleurolier manufacturers have also established specifications covering fluorescent equipment specifically. The purchase of equipment bearing the label of either group is an assurance that satisfactory material certified by the Electrical Testing Laboratories will be obtained.

Porcelain-enameled steel is most commonly used for fluorescent lamp reflectors, although with the lower operating temperatures of the fluorescent lamps, baked enamel, particularly baked white synthetics, also are being widely used. Although fluorescent lamps are not interchangeable due to the different lengths of each size lamp and the different ballasts that are required, it is desirable to be able to increase

the amount of light from any given reflector. Many reflectors for the 40-watt fluorescent lamp are designed with an original installation of two lamps with provision for the addition of a third lamp at a later date.

Another feature of a fluorescent installation is the relatively large number of lamps necessary for a given quantity of light. This involves an extensive wiring installation unless some means such as the continuous-row installation is adopted. This consists essentially of standard fluorescent industrial reflectors with closed ends to serve as louvers and break up the brightness effect of the long run of lamps when viewed along the row. The reflectors are mounted end to end. The most important feature of the equipment is the continuous channel upon which the reflectors are mounted. This serves as a closed wiring trough to which power need be brought at only one convenient point along the row. The channel also houses all of the necessary auxiliaries, compensators, starters, and sockets.

In recent years specular Alzak aluminum has been widely used both for supplementary lighting units and for high-bay general lighting equipment. Under the present emergency this material is no longer available for lighting equipment. However, one substitute is available in the form of a specular finished plastic of high efficiency. This material seems particularly applicable to fluorescent supplementary lighting where temperatures are well within permissible limits for the material.

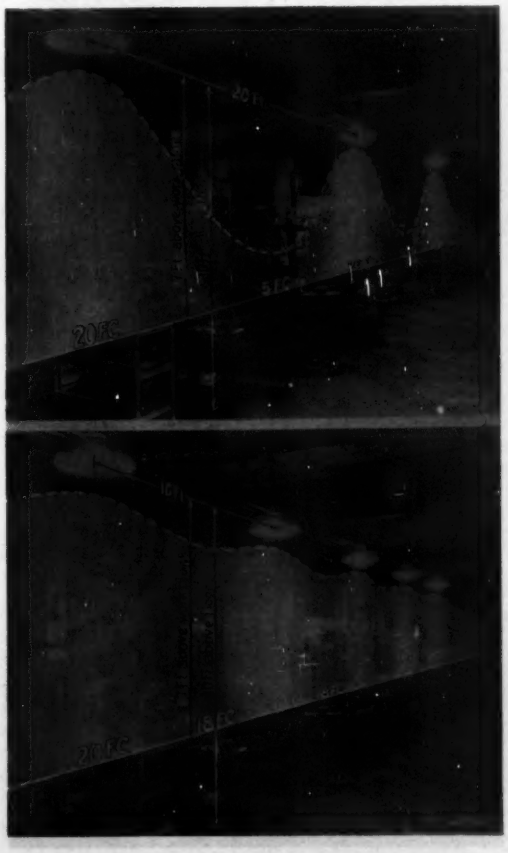

FIG. 4

**Too Wide Spacing Results in Poor Distribution. By Properly Spacing the Outlets, Reasonable Uniformity and Good Seeing Conditions Are Obtained.**

FIG. 5

**Continuous Troffers Using 40-Watt Daylight Mazda F (Fluorescent) Provide 70 Footcandles Throughout This Drafting Room. The Rows of Units Are on Three-Foot Centers Recessing in the Ceiling**

FIG. 6

**Continuous-Row Fluorescent Reflectors Using Two 40-Watt White Mazda F (Fluorescent) Lamps Provide 45 Footcandles of General Lighting. Note Also Supplementary Units for Each Operator Which Provide a Total of 300 Footcandles at All Working Points. The Continuous Rows Are Spaced 10 Feet 8 Inches Apart and Mounted 10 Feet 6 Inches above the Floor**

One important problem in papermaking is color matching. For this work it is necessary not only to provide the proper color quality of light but also to reduce to a minimum the glossy or specular reflection from the surface of the paper or wet pulp. This reflection overlays the true color of the surface and makes color matching extremely difficult. While this is an involved subject and worthy of much greater discussion, it may be said that the daylight fluorescent lamp is being used widely at the present time as a light source and that special booths have been designed which reduce to a minimum the annoying gloss reflection that upsets the color matcher's judgment.

The quality of lighting necessary in an office is somewhat more advanced than in the normal factory areas. This is true because of the prolonged and exacting visual tasks that are usually encountered.

For fluorescent lighting, because of the relatively low brightness of the source, direct-indirect louvered reflectors are being used very generally. In other cases direct lighting equipment louvered and recessed into the ceiling is used. A common characteristic of all of these reflectors is greater protection from seeing a direct view of the lamps than is generally afforded with industrial lighting equipment. Where filament lighting is used, indirect and luminous-bowl indirect fixtures are generally recommended for offices and drafting rooms.

### Maintenance

It has often been said that the best lighting engineer is the man with soap and water. What is meant by this phrase is that a thorough cleaning will usually increase the illumination more than the difference between well and poorly designed equipment. The best installation in the world rapidly loses its effectiveness unless frequently and thoroughly cleaned *(8)*. The period between cleanings will vary depending upon the rate of depreciation due to dirt collection, but in general cleaning periods of from one to three months will be found most economical. With such periods, the cost of cleaning is balanced by the value of the increased illumination which is obtained. Of chief importance, the quantity of light is maintained at nearly original levels and plant operations do not suffer from low illumination levels.

In some cases soap and water have been found undesirable because of the possibility of splashing it upon machinery or products below. This difficulty can be eliminated by the use of cleaning agents that contain wetting compounds. With these materials relatively little liquid is used, and the possibility of splashing is reduced to a minimum.

Where Alzak aluminum is to be cleaned, special compounds are available which contain wax or wax emulsions that not only clean the equipment but leave a thin wax film that protects it for a longer period.

One problem, particularly in sulphite process mills, is the possibility of corrosion of the lighting equipment. This has been minimized in some installations by the smearing of a thin grease over the portions of the equipment that are most likely to be attacked, such as the edges, beads, or other similar portions of reflecting and wiring equipment.

### Conclusion

Good lighting is a powerful and effective method of creating a more productive, safer, and more pleasant plant. Application methods have been refined greatly through research and continual field studies. Costs are lower than ever before and the quality of light is much better. It is truly an effective tool to increase overall plant efficiency.

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## TAPPI Pulp Purification Session

The Pulp Purification Committee of the Technical Association of the Pulp and Paper Industry has announced its program for the annual meeting to be held at the Commodore Hotel, New York, N. Y., on February 18, 1942:

Part I. General Papers

D. T. Jackson presiding.

1. "Some Fundamental Considerations about Alkaline Purification of Cellulose", by G. Goldfinger and H. Mark.
2. "Procedures and Brightness Grades in Bleaching Sulfate Pulps," by J. D. Rue and S. G. Nagel.
3. "Bleaching of Gumwood Sulfate," by J. D. Rue and S. G. Nagel.
4. "A Study of the pH Factor in the Hypochlorite Bleaching of Wood Pulp—Single Stage Treatment of Sulfite Pulp," by F. Casciani and G. K. Storin.
5. "Multistage Bleaching of Kraft Pulp," by S. D. Wells and F. B. Shelhorn (by title).

Part II—Round Table Discussion on "Methods of Reducing Chlorine Consumption"

Mr. Toovey presiding.

1. "Methods of Automatically Controlling the Chlorine Supply in Bleaching," G. A. Petroe and R. R. Fuller.
2. "Some Economies in Chlorine Consumption in Bleaching Chemical Wood Pulp," J. D. Rue and S. C. Nagel.
3. "A Discussion of Various Methods Which Have Been Suggested for Reducing Chlorine Consumption in Pulp Bleaching," by T. W. Toovey.

## TAPPI Notes

John H. Masshard, formerly of the Scott Paper Company is now Engineer for the Union Bag & Paper Corporation, Savannah, Ga.

M. R. Bhagwat, former member of TAPPI, has resigned as General Manager of the Chemists Advisory Council, Inc., New York, N. Y.

The TAPPI Ohio Section will meet at the Anthony Wayne Hotel, Hamilton, Ohio on Friday evening, February 20. Dr. George R. Sears of the Institute of Paper Chemistry will talk on the Electron Microscope.

The Forests Products Laboratory regrets to announce that due to its existing war policy the following papers scheduled for presentation at the annual meeting of the Technical Association next week will not be presented. A limited number of mimeographed copies of these papers will be distributed by the Laboratory.

Additional Evaluation of Variables and Materials in the Recovery of Wet Fiber Mats from Compressive Deformation, by C. O. Seborg and F. A. Simmonds.

Acid and Neutral Sulphite Semichemical Pulping of Several Arkansas Delta Hardwoods, by J. N. McGovern and G. H. Chidester.

Sulphate Pulping of Douglas-fir by a Continuous Liquor-Flow Method, by S. L. Schwartz and Mark W. Bray.

Strong, Refined Neutral Sulphite Semichemical Pulps from Douglas-fir, by H. E. Peterson, M. W. Bray and G. J. Ritter.

# Imports of Paper and Paper Making Stock

## Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.

**Importers may have their shipments listed in these columns by submitting records of imports to this publication.**

### NEW YORK IMPORTS

WEEK ENDING FEBRUARY 7, 1942

SUMMARY

Newsprint .....4,754 rolls

NEWSPRINT

——, ——, ——, 4,754 rolls.

PAPERSTOCK

Lush Cotton Products Co., ——, ——, 191 bls. cotton linters.
Kauders Steuber Co., ——, ——, 41 bls. cotton linters.
C. Kutz, ——, ——, 16 bls. cotton linters.
Chase National Bank, ——, ——, 283 bls. cotton linters.

CASEIN

——, ——, ——, 850 bags, 51,000 kilos.
——, ——, ——, 334 bags, 20,040 kilos.

BONES

Tupman Thurlow Co., Inc., ——, ——, 453 bags.

### PHILADELPHIA IMPORTS

WEEK ENDING FEBRUARY 7, 1942

Chase National Bank, ——, ——, 27 bls. gluestock.
E. Lang, ——, ——, 1,834 bags casein, 110,040 kilos.
American Cyanamid & Chemical Corp., ——, ——, 5,000 bags casein, 300,000 kilos.
——, ——, ——, 850 bags casein, 51,000 kilos.

## OPA Amends Waste Paper Prices

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 11, 1942—Maximum prices for waste paper become effective immediately for sales made in any part of the continental United States, in Amendment No. 5 to Price Schedule No. 30 for waste paper, announced today by Leon Henderson, Administrator of the Office of Price Administration.

Maximum prices are extended to cover sales by a producer in the area West of the Rocky Mountains to a consumer in the same area.

Previously, maximum prices applied only to sales from the area West of the Rockies to territories East of the Rockies and vice versa—as well as to exports and imports and to sales in the United States East of the Rockies.

The amendment also redefines what formerly was No. 1 baled news as No. 1 news. It establishes the price of old corrugated containers at $20 per short ton and the price of new corrugated cuttings at $21.50. Definitions of mixed paper, No. 1 news and old corrugated containers are modified and the stipulation is made that unless waste paper of these grades complies with all requirements of these definitions it may not be sold for a price in excess of $2 less than the maximum established for these grades by the schedule.

The definition of "mixed books" is modified to provide that if such waste paper contains more than 25% out-throws, it must be designated as No. 1 mixed paper and must be sold at prices provided in the schedule for that grade.

Another change removes from the schedule the former cost of $1 allowance for loading waste paper at a team track.

Mr. Henderson pointed out that all persons dealing in waste paper should study the amendments before transacting further business. He indicated that if certain persons in the trade do not change their present non-cooperative attitude toward the waste paper schedule the OPA will not only fully utilize the enforcement powers provided by the Price Control Act but also may find it necessary to license dealers, brokers and consumers of waste paper.

All interested should refer to the complete text of the amendment, which may be obtained from the Office of Price Administration, Washington, D. C.

## Study Newsprint Prices

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 11, 1942—The Canadian Wartime Prices and Trade Board and the Office of Price Administration of the United States Government are cooperating on a joint program for arriving at prices of newsprint and related products, it was announced today. A meeting of the representatives of the two bodies took place in New York on January 29.

An immediate study of the bases for second-quarter prices will be undertaken in the two countries. On the basis of these studies a definite announcement will be made prior to April 1 at which time second-quarter prices take effect. This announcement will follow a further meeting between representatives of the two price control bodies to be held some time during the month of March.

## Frank A. Augsbury Reelected

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., February 9, 1942—The Algonquin Paper Company has re-elected Frank A. Augsbury as president for the ensuing year. Other officers chosen include Mrs. Frank A. Augsbury, vice president; Harry Howes, secretary and treasurer. The board of directors will include Hewlett P. Strong, Harold Smith and the officers.

The George Hall Corporation, a subsidiary, has re-elected Mr. Augsbury as president; Wayne Lowe, vice president; Hewlett P. Strong, secretary and treasurer. The directorate for the year will include the officers and Albert Hutchinson, of Montreal.

# New York Paper and Pulp Market Review

## OPA Amends Rag and Waste Paper Price Schedules—No. 1 News Now $20 Per Ton—Ceiling Price of $5.75 Placed On Old Manila Rope—Demand For Wrapping Paper and Paper Board Heavy.

Office of the PAPER TRADE JOURNAL
Wednesday, February 11, 1942.

Somewhat less insistent trade demand for many kinds of paper is indicated in some reports received from many manufacturers' representatives, jobbers, and general paper merchants during the current week. Demand for wrapping paper and paper board is reported heavy under large-scale Government purchases for direct use, but particularly for Lend-Lease and Good Neighbor requirements.

Paper production for 1941, according to latest estimates, totaled 17,280,000 tons, against a capacity of 17,900,000 tons, which is an increase of 19% over 1940.

The index of general business activity declined to 139.4% for the week ended January 31, from 139.6% for the preceding week, compared with 122.7% for the corresponding week last year. Paper board production was 2.5% lower.

Paper production for the week ended January 31 was estimated at 103.2%, compared with 86.4% for 1941, with 89.2% for 1940, with 79.4% for 1939, and with 67.1% for the corresponding week for 1938.

Paper board production for the week ended January 31 was 101.0%, compared with 79.0% for 1941, with 72.0% for 1940, with 66.0% for 1939, and with 59.0% for the corresponding week for 1938.

Demand continues at a high level on some major grades of paper. Leading in volume at this date for civilian use, as well as in Government buying for all its requirements, are paper board, wrappings, sulphite bonds and mimeograph papers. Prices are stable with no important changes from prevailing market quotations reported this week.

### Chemical Pulp

The spot pulp market is bare, with no tonnage of any grade of chemical woodpulp available at this date. The requirements of the Government for nitrating pulp, which now replaces about 150,000 tons of sulphite paper pulp per year, is expected to be increased this year. If this occurs, it is expected to result in an acute supply situation next summer. Domestic production of chemical woodpulp for 1941 is at this date estimated at 8,100,000 tons, compared with government reports of 5,550,000 tons for 1939, the last official data available.

### Rags

The OPA Amendment No. 2, Price Schedule No. 47, Old Rags, places old Manila rope on this schedule. A price of $5.75 has been fixed on old Manila rope and the grade defined. All persons in the trade should study this amendment.

### Bagging

Prices on scrap bagging are reported firmly maintained at this date. Although OPA maximum prices are in effect on the No. 3 grade of bagging or roofing grade, prices on gunny are as yet unrestricted.

### Old Waste Paper

The OPA Amendment No. 5, Price Schedule No. 3, Waste Paper, is now in effect. A price of $20 per short ton has been placed on No. 1 News (formerly No. 1 Baled News). Price Administrator Leon Henderson states that all persons dealing in waste paper should study the amendment before transacting further business. Copies of the above amendment may be obtained by writing to the Office of Price Administration, Washington, D. C.

### Twine

Prices on all grade of hard and soft fiber twine are firmly maintained. No important change in the general market situation has been reported this week.

## Kalamazoo Discusses Paper Machines

The Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry met at the Park-American Hotel, Kalamazoo, Mich. on Thursday evening, February 5. Fred Elliott presided as chairman.

V. S. Denison of the Beloit Iron Works, Beloit, Wis. gave a brief history illustrated with slides of the development of the cylinder and fourdrinier paper machines.

The next meeting of the Section will be held at the Park-American Hotel on March 5. K. I. Ekholm of the National Aniline and Chemical Company will lead a discussion on coloring of paper.

## W. Willard Seary Dead

W. Willard Seary, 68, vice-president of the D. L. Ward Company, paper and cordage merchants, of 401 North Broad street, Philadelphia, Pa., died January 16 at his home in Haverford, Pa. He had been ill for sometime.

Mr. Seary had been associated with the D. L. Ward Company for 52 years and for over 35 years had been its vice-president.

Surviving are his wife, Alice Prentice Seary, and two sons, W. W. Seary, Jr., of Long Island, N. Y., and Charles Wesley Seary, now serving with the Canadian Royal Air Force.

## A. R. Melker Promoted

The Hamersley Manufacturing Company, Garfield, N. J., manufacturers of greaseproof parchment, glassine and waxed paper specialties, announce that as of January 1, 1942 A. R. Melker has been appointed sales manager of the Metropolitan area.

Mr. Melker has been connected with the paper industry for over 25 years and approximately 15 years with the Hamersley Manufacturing Company.

Walter L. Dawson, president and general sales manager of the company will continue in that capacity.

# MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL
Wednesday, February 11, 1942

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f.o.b. works. Demand reported good for the week.

BLEACHING POWDER—Quotations on bleaching powder are firm. Demand reported heavy for the week. Bleaching powder is currently quoted at $2.25 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are firm, under a good demand for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at 30 cents per pound; 80-100 mesh, at 30½ cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at 25 cents per pound. No quotations in French casein.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Demand reported active. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, car lots, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per long ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Demand very heavy. Full allocation in effect February 1. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices higher on some grades. "G" gum rosin is currently quoted at $3.21 per 100 pounds, in barrels, Savannah. "FF" wood rosin is currently quoted at $3.21 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $3.53 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm. Demand active for the current week. Domestic salt cake is currently quoted at $15 per ton, in bulk; chrome cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16 per ton imported salt cake is nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported heavy for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and are reported unchanged for the current week. Pearl is currently quoted at $3.27 per 100 pounds; powdered starch at $3.27 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported active for the current week. The commercial grades are currently quoted at $1.15; iron free at $1.75 to $1.85 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $18 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. No quotations on imported talc.

# MARKET QUOTATIONS

## Paper

**(Delivered New York)**

| | | | |
|---|---|---|---|
| **News, per ton—** | | | |
| Roll, contract | $50.00 | @ | — |
| Sheets | 58.00 | " | — |
| **Kraft—per cwt.—Delivered Zone A** | | | |
| Northern, Extra Quality | $6.00 | @ | $7.00 |
| Superstandard | 5.25 | " | 6.25 |
| Northern Standard Wrapping | 4.75 | " | 5.25 |
| Standard Wrapping | 4.75 | " | — |
| **Tissues—Per Ream—Carlots** | | | |
| White No. 1 | 1.12½ | " | — |
| White No. 1 M. G. | 1.05 | " | — |
| White No. 1½ | 1.00 | " | — |
| White No. 2 | 1.00 | " | — |
| Anti-Tarnish M. G. | .95 | " | — |
| Colored | — | " | — |
| Kraft | .95 | " | — |
| Manila | .90 | " | — |
| Unbl. Toilet, 1 M. | 4.16 | " | — |
| Bleached Toilet | 5.70 | " | — |
| **Paper Towels, Per Case** | | | |
| Unbleached, Jr. | 2.35 | " | — |
| Bleached, Jr. | 2.65 | " | — |
| **Manila—per cwt.—C. l. t. a.** | | | |
| No. 1 Jute | 8.75 | @ | 10.75 |
| No. 1 Manila Wrapping, 35 lb. | 5.50 | " | 5.75 |
| No. 2 Manila Wrapping, 35 lb. | 5.25 | " | 5.50 |

| | Maximum Base Price Per Ton (2000 lbs.) | 1-3 Tons Inclusive | 4-9 Tons Inclusive | 10 Tons or Over |
|---|---|---|---|---|
| Plain Chip | *$45.00 | +$5.00 | +$2.50 | +$1.50 |
| Filled News | *45.00 | + 8.00 | + 5.50 | + 3.00 |
| Sgl. Mla. Ll. Chip | *60.00 | + 5.00 | + 2.50 | Base |
| No. 1 Sgl. White Pat. Coated, Ga. List No. 6, .020 and heavier | *75.00 | + 5.00 | + 2.50 | Base |
| Kraft Fourdinier Liner, 50# Per M sq. ft. | *1.50 | | | |
| Binders Board | 80.00 | | | |

* OPA Maximum Prices.

**The following are representative of distributors' resale prices:**

**Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:**

| | Bonds | | Ledgers |
|---|---|---|---|
| 100% Rag Ext. No. 1 | $40.25 | @$47.25 | $41.40 @$48.50 |
| 100% Rag | 32.20 " | 37.75 | 33.35 " 39.25 |
| 85% Rag | .... " | .... | 32.20 " 37.75 |
| 75% Rag | 24.75 " | 29.00 | 25.90 " 30.50 |
| 65% Rag | .... " | .... | 22.80 " 27.75 |
| 50% Rag | 18.70 " | 22.75 | 19.90 " 24.25 |
| 25% Rag | 16.40 " | 20.00 | 17.55 " 21.50 |

Colors at $1.00 cwt. extra.

**Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:**

| | Bonds | | Ledgers |
|---|---|---|---|
| No. 1 | $10.55 @$12.75 | | $11.70 @$14.25 |
| No. 2 | 9.65 " | 11.75 | 10.80 " 13.25 |
| No. 3 | 9.20 " | 11.25 | 10.35 " 12.50 |
| No. 4 | 8.90 " | 10.75 | 10.05 " 12.25 |

Colors $1.00 cwt. extra.

**Free Sheet Book Papers—White, Cased Paper.**

**Delivered in Zone 1:**

| | | | |
|---|---|---|---|
| No. 1 Glossy Coated | $13.65 | @ | $15.50 |
| No. 2 Glossy Coated | 12.40 | " | 14.00 |
| No. 3 Glossy Coated | 11.60 | " | 13.25 |
| No. 4 Glossy Coated | 11.15 | " | 12.75 |
| No. 1 Antique (watermarked) | 10.25 | " | 11.75 |
| No. 2 Offset | 9.60 | " | 11.00 |
| A Grade E. F. | 9.35 | " | 10.75 |
| A Grade S. & S. C. | 9.60 | " | 11.00 |
| B Grade E. F. | 8.85 | " | 10.25 |
| B Grade S. & S. C. | 9.10 | " | 10.50 |
| C Grade E. F. | 8.55 | " | 9.75 |
| C Grade S. & S. C. | 8.80 | " | 10.00 |
| D Grade E. F. | 8.25 | " | 9.50 |
| D Grade S. & S. C. | 8.50 | " | 9.75 |

Ivory & India at $.50 cwt. extra.

## Mechanical Pulp

**(On Dock, Atlantic Ports)**

| | | | |
|---|---|---|---|
| No. 1 Imported— | | | |
| Moist | No prices | | |
| Dry | No prices | | |

**(Delivered)**

| | | | |
|---|---|---|---|
| No. 1 Domestic and Canadian | 40.00 | @ | 45.00 |

## Chemical Pulp

**(On Dock, Atlantic, Gulf and West Coast Ports)**

| | | | |
|---|---|---|---|
| **Bleached Sulphite (Domestic and Foreign)—** | | | |
| Prime Bleached Sulphite | 3.62½ | @ | 4.75 |
| **Prime Qualities—** | | | |
| Easy-Bleaching Sulphite | 3.17½ | " | 4.25 |
| Strong Unbleached Sulphite | 3.17½ | " | 4.25 |
| **News Grade, delivered** | | | |
| Unbleached Sulphite | 63.75 | " | 67.75 |

**(On Dock, Atlantic Ports)**

| | | | |
|---|---|---|---|
| Kraft Bleached | 4.12½ | " | — |
| Kraft Light & Strong | No price | | |
| Kraft No. 1 | No prices | | |

**(Delivered)**

| | | | |
|---|---|---|---|
| Kraft Domestic and Canadian | 3.00 | " | 4.00 |

**(Delivered)**

| | | | |
|---|---|---|---|
| Soda Bleached | 1.30 | " | — |

**Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.**

## Domestic Rags

**New Rags**

**(Prices to Mill f. o. b. N. Y.)**

| | | | |
|---|---|---|---|
| **Shirt Cuttings—** | | | |
| New White, No. 1 | 8.00 | @ | 8.25 |
| Silesias No. 1 | 4.50 | " | 4.75 |
| New Unbleached | 8.00 | " | 8.25 |
| Blue Overall | 5.75 | " | 6.00 |
| Fancy | 3.00 | " | 3.25 |
| Washables | 2.50 | " | 2.75 |
| Mixed Khaki Cuttings | 2.50 | " | 2.75 |
| O. D. Khaki Cuttings | 3.00 | " | 3.15 |

**Old Rags**

| | | | |
|---|---|---|---|
| White, No. 1— | | | |
| Repacked | *3.80 | " | — |
| Miscellaneous | *3.20 | " | — |
| White, No. 2— | | | |
| Repacked | *2.90 | " | — |
| Miscellaneous | *2.65 | " | — |
| Third and Blues— | | | |
| Repacked | *2.20 | " | — |
| Miscellaneous | *1.80 | " | — |
| Roofing Rags— | | | |
| No. 1 | *1.55 | " | — |
| No. 2 | *1.45 | " | — |
| No. 3 (bagging) | *1.35 | " | — |
| No. 4 | *1.35 | " | — |
| No. 5A | *1.35 | " | — |
| * Old Manila Rope | 5.75 | " | — |

*OPA Maximum Prices.

## Foreign Rags

**All prices nominal**

**New Rags**

| | | | |
|---|---|---|---|
| New Dark Cuttings | 2.25 | @ | 2.40 |
| New Mixed Cuttings | 2.00 | " | 2.20 |
| New Light Silesias | 5.50 | " | 5.75 |

| | | | |
|---|---|---|---|
| Light Flannelettes | 5.50 | " | 5.75 |
| New White Cuttings | 7.00 | " | 7.50 |
| New Light Oxfords | 4.00 | " | 4.50 |
| New Light Prints | 3.00 | " | 3.25 |
| **Old Rags** | | | |
| No. 1 White Linens | 7.50 | " | 8.50 |
| No. 2 White Linens | 6.50 | " | 7.50 |
| No. 3 White Linens | 4.50 | " | — |
| No. 4 White Linens | 4.25 | @ | 3.25 |
| No. 1 White Cotton | 4.25 | " | 4.75 |
| No. 2 White Cotton | 3.25 | " | 3.75 |
| No. 3 White Cotton | 2.50 | " | 3.00 |
| No. 4 White Cotton | 1.90 | " | 2.20 |
| Extra Light Prints | 2.00 | " | 2.40 |
| Ord. Light Prints | 1.75 | " | 2.15 |
| Med. Light Prints | 1.55 | " | 1.95 |
| Dutch Blue Cottons | 2.25 | " | 2.50 |
| French Blue Linens | 3.00 | " | — |
| Checks and Blues | 2.00 | " | — |
| Linsey Garments | 1.90 | " | 2.00 |
| Dark Cottons | 1.50 | " | 1.60 |
| Old Shopperies | 1.30 | " | 1.45 |
| New Shopperies | 1.45 | " | 1.50 |
| French Blues | 2.25 | " | 2.50 |

## BAGGING

(Prices to Mill, f. o. b. N. Y.)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign | Nominal | | |
| Domestic | 4.00 | @ | 4.25 |
| Wool Tares, light | 4.25 | " | 4.50 |
| Wool Tares heavy | 4.50 | " | 4.75 |
| Bright Bagging | 3.50 | " | 3.75 |
| Jute Threads | 4.00 | " | 4.25 |
| Sisal Strings | 2.75 | " | 3.00 |
| Mixed Strings | 1.10 | " | 1.20 |

## Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices

| | | | |
|---|---|---|---|
| No. 1 Hard White Envelope Cuts, one cut | 3.37½ | @ | — |
| No. 1 Hard White Envelope Cuts | 3.12½ | " | — |
| No. 1 Hard White Shavings, unruled | 2.87½ | " | — |
| No. 1 Hard White Shavings, ruled | 2.50 | " | — |
| Soft White Shavings, one cut | 2.87½ | " | — |
| No. 1 Soft White Shavings | 2.50 | " | — |
| Soft White Shavings, Misc. | 2.15 | " | — |
| No. 1 Fly Leaf Shavings | 1.67½ | " | — |
| No. 2 Fly Leaf Shavings | 1.12½ | " | — |
| No. 1 Groundwood Fly Leaf Shavings | 1.25 | " | — |
| No. 2 Mixed Groundwood Fly Leaf Shavings | .90 | " | — |
| Mixed Colored Shavings | .75 | " | — |
| Mixed Groundwood Colored Shavings | .90 | " | — |
| Overissue Magazines | 1.67½ | " | — |
| No. 1 Heavy Books & Magazines | 1.57 | " | — |
| Mixed Books | 1.07½ | " | — |
| No. 1 White Ledger | 2.17½ | " | — |
| No. 2 Mixed Ledger, colored | 1.87½ | " | — |
| New Manila Envelope Cuttings, one cut | 2.87½ | " | — |
| New Manila Envelope Cuttings | 2.65 | " | — |
| Extra Manilas | 1.85 | " | — |
| Mixed Kraft, Env. & Bag Cuttings | 2.75 | " | — |
| Kraft Envelope Cuttings | 3.25 | " | — |
| Triple Sorted, No. 1 Brown Soft Kraft | 2.50 | " | — |
| New 100% Kraft Corrugated Cuttings | 2.25 | " | — |
| No. 1 Assorted Old Kraft | 1.75 | " | — |
| Jute Corrugated Cuttings | .90 | " | — |
| Old Corrugated Containers | .82½ | " | — |
| Box Board Cuttings | .72½ | " | — |
| White Blank News | 1.65 | " | — |
| Overissue News | .85 | " | — |
| No. 1 News | 1.00 | " | — |
| No. 1 Mixed Paper | .70 | " | — |

## Twines

(F. o. b. Mill)

(Soft Fiber)

| | | | |
|---|---|---|---|
| Coarse Polished— | | | |
| India | .21 | @ | — |
| White Hemp | .21 | " | — |
| Fine Polished— | | | |
| Fine India | .26 | " | — |
| Unpolished— | | | |
| Box | .17½ | " | — |
| Paper Makers | .17 | " | — |
| Tube Rope | .19 | " | — |
| Wall Paper | .20½ | " | — |
| Wrapping | .23 | " | — |
| Soft Fiber Rope | .19 | " | — |
| Cotton | .25 | " | — |
| (Hard Fiber) | | | |
| Medium Java | .18 | " | — |
| Mex. Sisal | .16 | " | — |
| Manila | .25 | " | — |

# PHILADELPHIA

## Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White No. 1 | .07½ | @ | .07½ |
| New White No. 2 | .04½ | " | .05 |
| Light Silesias | .04½ | " | .04¾ |
| Silesias, No. 1 | .04 | " | .04¼ |
| Black Silesias, soft | .03¾ | " | .04 |
| New Unbleached | .07¾ | " | .07½ |
| Washable Prints | .03¾ | " | .03½ |
| Washable No. 1 | .02 | " | .02¼ |
| Blue Overall | .04½ | " | .05½ |
| Cottons—According to grades— | | | |
| Washable shredding | — | " | .01¾ |
| Fancy Percales | .03¼ | " | .03½ |
| New Black Soft | .02¾ | " | .03 |
| New Dark Seconds | 1.75 | " | 2.00 |
| Khaki Cuttings— | | | |
| No. 1 O. D. | .03 | " | .03¼ |
| No. 2 Mixed | .02¼ | " | .02½ |
| Corduroy | .01¾ | " | .02¼ |
| New Canvas | .04¾ | " | .05¼ |
| New Black Mixed | — | " | .02½ |

## Domestic Rags (Old)

| | | | |
|---|---|---|---|
| White No. 1—Repacked | 3.80 | " | — |
| White No. 2—Repacked | 2.90 | " | — |
| Miscellaneous No. 1 | 3.20 | " | — |
| Miscellaneous No. 2 | 2.65 | " | — |
| Thirds and Blues— | | | |
| Miscellaneous | 1.80 | " | — |
| Repacked | 2.20 | " | — |
| Black Stockings— (Export) | Nominal | | |
| Roofing Stock— | | | |
| Foreign No. 1 | Nominal | | |
| Domestic No. 1 | 1.55 | " | — |
| Domestic No. 2 | 1.45 | " | — |
| Roofing Bagging | 1.35 | " | — |
| Old Manila Rope | 5.75 | " | — |

## Bagging

(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Gunny, No. 1— | | | |
| Foreign | Nominal | | |
| Domestic | 3.00 | " | 3.50 |
| Sisal Rope | 3.75 | " | — |
| Mixed Rope | .75 | " | 1.00 |
| Scrap— | | | |
| No. 1 | 3.25 | " | 3.50 |
| No. 2 | 1.75 | " | 1.80 |
| Wool Tares, heavy | 4.00 | " | 4.25 |
| No. 1 New Light Burlap | 3.00 | " | 4.00 |
| New Burlap Cuttings | 3.75 | " | 4.00 |

## Old Papers

(F. o. b. Phila.)

OPA Maximum Prices

| | | | |
|---|---|---|---|
| No. 1 Hard White Envelope Cuts, one cut | 3.37½ | " | — |
| No. 1 Hard White Shavings, unruled | 2.50 | " | — |
| Soft White Shavings, one cut | 2.87½ | " | — |
| White Blank News | 1.65 | " | — |
| Soft White Shavings, Misc. | 2.15 | " | — |
| No. 1 White Ledger | 2.17½ | " | — |
| No. 2 Ledger, colored | 1.87½ | " | — |
| No. 1 Heavy Books & Magazines | 1.57 | " | — |
| Overissue Magazines | 1.67½ | " | — |
| New Manila Envelope Cuttings | 2.65 | " | — |
| No. 1 Assorted Old Kraft | 1.75 | " | — |
| No. 1 Mixed Paper | .70 | " | — |
| Box Board Cuttings | .72½ | " | — |
| Jute Corrugated Cuttings | .90 | " | — |
| Overissue News | .85 | " | — |
| No. 1 News | 1.00 | " | — |

# BOSTON

## Old Papers

(F. o. b. Boston)

OPA Maximum Prices

| | | | |
|---|---|---|---|
| No. 1 Hard White Shavings, unruled | 2.87½ | " | — |
| No. 1 Hard White Shavings, unruled | 2.87½ | " | — |
| No. 1 Hard White Shavings, ruled | 2.50 | " | — |
| Soft White Shavings, Misc. | 2.15 | " | — |
| No. 1 Fly Leaf Shavings | 1.67½ | " | — |
| No. 2 Fly Leaf Shavings | 1.12½ | " | — |
| No. 1 Groundwood Fly Leaf Shavings | 1.25 | " | — |
| No. 2 Groundwood Fly Leaf Shavings | .90 | " | — |
| Mixed Colored Shavings | .75 | " | — |
| New Manila Envelope Cuts, one cut | 2.87½ | " | — |
| Hard White Envelope Cuts, one cut | 3.37½ | " | — |
| Triple Sorted No. 1 Brown Soft Kraft | 2.50 | " | — |
| Mixed Kraft Env. & Bag Cuttings | 2.75 | " | — |
| Kraft Envelope Cuttings | 3.25 | " | — |
| No. 1 Heavy Books & Magazines | 1.57 | " | — |
| New Manila Envelope Cuts, one cut | 2.87½ | " | — |
| New Manila Envelope Cuttings | 2.65 | " | — |
| White Blank News | 1.65 | " | — |
| No. 1 Assorted Old Kraft | 1.75 | " | — |
| No. 1 Mixed Paper | .70 | " | — |
| Overissue News | .85 | " | — |
| Box Board Cuttings | .72½ | " | — |
| Old Corrugated Containers | .82½ | " | — |
| Jute Corrugated Cuttings | .90 | " | — |

## Bagging

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Gunny Bagging— | | | |
| Foreign | (nominal) | | |
| Domestic | 4.00 | @ | 4.15 |
| Sisal Rope | 4.00 | " | 4.25 |
| Mixed Rope | 1.00 | " | 1.25 |
| Transmission Rope— | | | |
| Foreign | (nominal) | | |
| Domestic | 3.50 | " | 3.75 |
| Soft Jute Rope | 5.25 | " | 5.50 |
| Jute Carpet Threads | 3.25 | " | 3.50 |
| Bleachery Burlap | 8.00 | " | 8.50 |
| Scrap Burlap— | | | |
| Foreign | (nominal) | | |
| Domestic | 4.00 | " | 4.25 |
| Scrap Sisal | 4.00 | " | 4.25 |
| Scrap Sisal for Shredding | 4.25 | " | 4.50 |
| Wool Tares— | | | |
| Foreign | (nominal) | | |
| Domestic | 4.00 | " | 4.25 |
| Aust. Wool Pouches | 5.25 | " | 5.50 |
| New Burlap Cuttings | 4.50 | " | 5.00 |
| Heavy Baling Bagging | 5.00 | " | 5.50 |
| Paper Mill Bagging | 3.00 | " | 3.25 |
| No. 2 Bagging | 1.35 | " | — |

## Domestic Rags (New)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New Light Prints | .04½ | @ | .04¾ |
| Fancy Percales | .04¼ | " | .05 |
| New White No. 1 | .08 | " | .08¼ |
| New Light Flannelettes | .06 | " | .06¼ |
| Canton Flannel, Bleached | .08¼ | " | .08½ |
| Underwear Cutters, Bleached | .08 | " | .08¼ |
| Silesias No. 1 | .04½ | " | .05 |
| New Black Silesias | .03¾ | " | .04 |
| Red Cotton Cuttings | .03½ | " | .04 |
| Soft Unbleached | .08¼ | " | .08½ |
| Blue Cheviots | .04¾ | " | .05 |
| Fancy | .02¾ | " | — |
| Washable | .01¾ | " | — |
| Cottons—According to Grades | | | |
| Blue Overalls | — | " | .05½ |
| New Black, Soft | .03¾ | " | .04 |
| Khaki Cuttings | .02¾ | " | .02½ |
| O. D. Khaki | .02½ | " | .03¼ |
| Corduroy | .02 | " | .02¾ |
| New Canvas | .06 | " | .06½ |
| B. V. D. Cuttings | .07¾ | " | .08 |

## Domestic Rags (Old)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| White No. 1— | | | |
| Repacked | 3.80 | @ | —* |
| Miscellaneous | 3.20 | " | —* |
| White No. 2— | | | |
| Miscellaneous | 2.65 | " | —* |
| Twos and Blues, Repacked | 2.20 | " | —* |
| Old Blue Overalls | 2.25 | " | 2.50 |
| Thirds and Blues, Repacked | 2.20 | " | —* |
| Miscellaneous | 1.80 | " | —* |
| Black Stockings | 3.50 | " | 4.00 |
| Roofing Stock— | | | |
| No. 1 | 1.55 | " | —* |
| No. 2 | 1.45 | " | —* |
| No. 3 | 1.35 | " | —* |
| No. 4 | 1.35 | " | —* |
| No. 5, Quality A | 1.35 | " | —* |
| Quality B | 1.20 | " | —* |
| Quality C | .95 | " | —* |
| * Old Manila Rope | 5.75 | " | — |

* OPA Maximum Prices.

## Foreign Rags

(F. o. b. Boston)

| | |
|---|---|
| Canvas | (nominal) |
| Dark Cottons | (nominal) |
| Dutch Blues | (nominal) |
| New Checks and Blues | (nominal) |
| Old Fustians | (nominal) |
| Old Linsey Garments | (nominal) |
| New Silesias | (nominal) |

# CHICAGO

## Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices.

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White Envelope Cuts, one cut | 3.37½ | " | — |
| No. 1 Hard White Shavings, unruled | 2.50 | " | — |
| No. 1 Soft White Shavings | 2.50 | " | — |
| No. 1 White Ledger | 2.17½ | " | — |
| No. 1 Heavy Books & Magazines | 1.57 | " | — |
| White Blank News | 1.65 | " | — |
| Mixed Kraft Env. & Bag Cuttings | 2.75 | " | — |
| No. 1 Assorted Old Kraft | 1.75 | " | — |
| Overissue News | .85 | " | — |
| No. 1 News | .75 | " | — |
| No. 1 Mixed Paper | .70 | " | — |
| No. 1 Roofing Rags | 1.55 | " | — |
| No. 2 Roofing Rags | 1.45 | " | — |

## Donnaconna Issues Good Report

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 9, 1942—The financial statement of the Donnacona Paper Company, Limited, for 1941 shows a substantial increase in operating profits, but as a result of increased interest charges, much heavier provision for depreciation and depletion ($759,362 vs. $558,713) and somewhat larger provision for income and excess profits taxes, net profit for the year shows a moderate reduction, $104,655 comparing with $129,640 a year ago. This net was equal to 28 cents a share as compared with 34 cents a share for 1940. After dividends, which at 10c a share absorbed $37,657, an amount of $66,998 was added to earned surplus, which now stands at $248,712. Robert P. Kernan presented the report.